



TEACHER'S EDITION
HOLT MATHEMATICS SYSTEM

BOOK 1



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Teacher's Edition Holt Mathematics System Book One

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Mathematics System*

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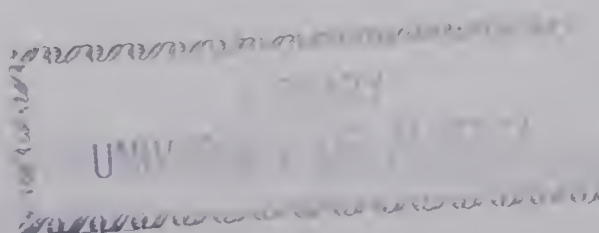
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TEACHER'S COMMENTARY

What is the Holt Mathematics System?

The Holt Mathematics System (HMS) consists of four components for grades K-3 and six components for grades 4-6. The components are integrated to provide mathematics instruction and exercises for all students. The approach used assures that each student can learn mathematics through a medium best suited to his or her abilities and style of learning. This multi-component approach is based on the idea that students must be motivated to learn, and that different students are motivated to learn in different ways.

The six components of HMS provide a variety of motivating and teaching devices with which to reach students.

These components are:

Textbooks

- Student's Book
- Teacher's Book

Supplementary Items: K-3

- Duplicating Masters (Grade 3)
- BFA Computational Skills Kit I

Supplementary Items: 4-6

- Duplicating Masters
- BFA Computational Skills Kit II
- BFA Problem Solving Skills Kit
- Calculator Workbook

TEACHING STRATEGIES

There is no one best way to teach mathematics to all students. Therefore, the Holt Mathematics System is adaptable to many teaching styles.

Four different ways in which the program can be taught are:

- Teach the whole class together; have all students work on the same material at the same time, with the same written assignments.
- Teach the whole class together; have all students work on the same material at the same time, but differentiate the written assignments.
- Group the children and teach each group separately. Each group may be doing different lessons on the same day.
- Use a continuous progress approach, letting each student progress at his or her own rate; every student could be working on a different lesson on any particular day.

Suggestions in the *Teacher's Edition* provide assistance in differentiating the assignments.

THE STUDENT'S BOOK

Language

It is important to teach students to become better readers, even within the framework of mathematics instruction. A deficiency in reading should not stand in the way of learning mathematics. Although printed words appear on the lesson pages, grades 1 and 2 are practically non-verbal. The language used is simple, and concepts are presented by means of pictures or examples rather than by verbal explanation. In grade 1 there are no directions on the page. In grade 2, directions are either one word, or a short sentence. The exceptions to this are the problem-solving pages. But even here a picture dictionary is shown.

A picture dictionary is a visual representation of a word. It is displayed on most problem solving pages in which mini word problems are presented. The picture dictionary is used to help the child read the printed words used in the problems. By using this dictionary, the child can see the word and associate it with a familiar picture.

Lesson titles are printed at the top of each lesson to describe the lesson to the teacher. Brief descriptions of what is being taught on the page are printed at the bottom of each page so that parents will know what the child is doing.

Content

Students do not fully master any concept on the first encounter. In HMS, a concept is introduced in a unit, reviewed and developed more completely in subsequent units as students move through the years. Understanding is consistently reinforced as students bring their growing knowledge to bear upon more abstract concepts and more difficult skills. The stages of presentation of major concepts are as follows:

First stage—a thorough introduction

Second stage—reinforcement and mastery

Third stage—maintenance and extension

The major primary grade strands of study which appear in each book are:

Number and Numeration

Operations and Properties

Sentences

Problem Solving and Application

Reasoning

Geometry

Measurement

Graphs, Tables

Probability

Developmental Aspects of Lessons

The Holt Mathematics System is “developmental” in that each lesson is sequenced to proceed from an initial activity, through a learning stage, and finally to practice exercises. This lesson style (**display**, **development**, and **drill**) was adopted to give children an understanding of the concepts in the lessons through active participation in the development of the concepts or skills, followed by practice in the use of these concepts.

Each lesson follows a definite pattern: (1) **display**—an *initial activity* where hands-on materials such as blocks are used to teach the concept; the initial activity appears in the side column of the teacher’s edition for every lesson. (2) **development**—a *learning stage* which uses pictures and other visual hints to develop the concept; the learning stage is the first part of each pupil page lesson where the child is guided, through the use of dashed numerals or other hints, to the pattern of response. To provide immediate reinforcement, the answers to some of the developmental items, indicated by circles, are placed in the back of the book. (3) **drill—exercises** which drill the concept or skill; the exercises are the items which the children do on their own to demonstrate understanding.

Basic Skills

The HMS program embodies the philosophy that it is important for the student to develop a concept or skill meaningfully. However, a meaningful development needs to be followed by practice. To become a proficient user of mathematics one has to practise the skills that have been acquired. Accordingly, ample practice is provided to diagnose areas of difficulty and to maintain skills. A large number of computational exercises appear in each book with over 4000 exercises in each book, levels 2-6. The teacher is also encouraged, as needed, to use additional exercises found in the several components of HMS.

Exercises which extend the developmental items presented in the lesson are starred. Additional challenges are provided by the Braintickers.

You will notice that HMS asks students to discover patterns. These experiences are intended to help the student develop a sense of relationship between numbers and to make him or her more self-reliant when tackling a problem. Discovering patterns is an enjoyable activity since it is usually accompanied by a sense of anticipation.

Diagnosing

Diagnostic materials appear in levels 1 and 2 in the form of **Check-Up** lessons. **Check-Up** pages are cumulative test pages which test basic mathematics concepts and skills. These tests enable the teacher to pinpoint areas of the child’s achievement or deficiency prior to studying other concepts in the

text. Based on the results, one can determine what combination of learning experiences will best help each child. In levels 3-6 these pages are called **Cumulative Reviews**.

There are pages called **Basic Skills Check Up**. They provide experience in the type of format that is often used on standardized tests.

The **Chapter Test** at the end of each chapter can also be used diagnostically. Each exercise in the test is keyed to the pages on which the skill is developed. This provision enables the teacher to review specific concepts and skills needing improvement.

Maintaining Skills

Practice Exercises consists of additional exercises for specific lessons in counting, time, addition and subtraction. This section is found in the back of each pupil book.

At regular intervals the student will find skill maintenance pages. These pages are called **Keeping Fit** in levels K-2 and **Tune Up** in levels 3-6. These pages are spaced throughout the books and provide regular practice of previously learned skills and concepts.

Extra Practice pages appear at regular intervals and provide additional exercises for addition, subtraction, multiplication and division facts. For those who desire additional material, supplementary material in the form of duplicating masters, computational skills kit, problem solving skills kit and a calculator workbook are available.

In levels 3-6 each chapter after the first has a **Cumulative Review**.

Testing

A complete testing program for monitoring students’ progress is provided within HMS. Periodic diagnostic testing was discussed earlier. There are **Chapter Tests** at the end of each chapter to test the extent of mastery over the essential content of the chapter. They are diagnostic. In levels 1 and 2 these **Chapter Tests** are called **THINK**. In subsequent levels they are called **Chapter Test**.

For those who desire additional test materials, supplementary tests in the form of duplicating masters are available.

Measurement

The measurement sections in HMS are completely SI metric. This strand emphasizes a hands-on approach, but also has written exercises to develop the inter-relationships among the units.

In introducing a new measure, a non-standard unit is used first. Then the standard metric unit is introduced and used.

Problem Solving

Solving problems is one of the major strands in HMS. We start problem solving early and use it as a tool for reinforcing basic facts.

The development of problem-solving skills is very gradual. It is based essentially on (1) interpreting action pictures, (2) joining and separating sets of objects, and (3) solving word problems without pictures. Word problems are first presented in the form of mini-problems which contain a picture dictionary to help children read the printed words. Mini-problems contain only those words which are necessary for an understanding of the problems. To facilitate the child's ability to solve problems, only two types of questions appear in any one lesson.

The problem-solving lessons in the early levels follow these phases of development:

- Completing an addition sentence by interpreting a pictured problem
- Completing a subtraction sentence by interpreting a pictured problem
- Choosing an addition sentence to fit a pictured problem
- Choosing a subtraction sentence to fit a pictured problem
- Completing a number sentence by deciding whether to add or subtract
- Solving mini-problems (vertical form)
- Solving word problems (vertical form)

In levels 4-6, Professor Q is used as a reminder to the students of certain steps basic to problem solving.

In addition to this rich and systematic program of developing problem-solving skills, HMS includes a lesson on problem solving related to a selected career in each chapter. This career strand is of considerable importance to this program and is therefore discussed in detail.

Career Strand

Making children aware of existing careers makes mathematics learning relevant, realistic, and motivational. Career educational experiences are oriented toward helping children appreciate the worth and dignity of work, to achieve future economic independence, and to experience a sense of personal fulfillment.

Specifically, the purpose of the HMS career strand is two-fold:

- To stimulate career awareness in children by presenting them with problems which deal with situations related to various careers, and
- To provide teachers with the essential information about various careers.

To facilitate the child's career development, appropriate learning experiences or activities are provided in the teacher's edition for lessons dealing with careers. These lessons are adapted to the developmental level of the child. The careers are chosen to focus on certain specific objectives:

- To help the child develop an awareness of physical skills
- To develop an awareness of the ability to perform
- To develop an awareness of self and others
- To help students develop self-reliance
- To develop an awareness of a multitude of careers

To develop social awareness

To help students appreciate the worth and dignity of work

To develop wholesome work habits and positive attitudes toward careers

To develop occupational decision making skills

Each chapter has one or more specific careers highlighted and provides the opportunity to discuss others.

Activity Pages

Interspersed throughout the texts are *activity pages*. *Activity pages* provide motivation and active participation on the part of the child. Concepts are developed or practised through the use of activities. The activities range from coloring and cut-and-paste to dot-to-dot pictures and organizing and collecting familiar data or objects. There are many suggestions for at-home activities.

Chapter Themes

In an effort to motivate children and to inter-relate mathematics to other subject areas, chapters in these books are oriented toward certain themes. For example, the theme of a chapter may pertain exclusively to transportation, fairy tales, the sea, the farm, the community, the circus, foreign lands, and others. The illustrations in each of these chapters emphasize the theme of the chapter. Chapter themes are identified in the Chapter Overviews.

In addition to chapter themes, critter characters are common throughout each text. The character common to grade 1 is a walrus called Flub Blub. In grade 2, it is a big bird, called Plat Flat.

The Teacher's Edition

The *Teacher's Edition* has been designed so that most lessons are presented on facing pages, thus making it very easy to use.

The *Teacher's Edition* is the key to using HMS. All references to components of this program, as they apply to each lesson, are provided literally at one's fingertips. With this type of manual, the teacher can easily direct students to other practice materials, guide them to activities, and provide them with projects that will extend their mathematical horizons.

Front of Teacher's Edition

An **Activity Reservoir** section, consisting of mathematical games and activities, provides a framework for enjoyable practice work throughout the year. These games and activities are keyed into individual lessons, but each may be adapted and used at the discretion of the teacher.

A **Problems of the Week** section consists of challenging mathematical puzzles and problems. These are for additional motivation. They can be offered to students via the bulletin board or a special problem box.

A **Cumulative Final Test** is supplied for evaluation of the students’ achievement in the entire year’s work. This test is styled like a typical standardized test; it gives students an opportunity to practice taking a test in a multiple-choice form.

Chapter Overview

Chapter Overviews are appropriately interleaved before each chapter. Each overview consists of the following parts:

- An **Introduction** explains what content is to be studied in the chapter.
- Objectives** for the chapter are stated in behavioral terms.
- Background** provides a meaningful setting for the mathematical concepts and skills taught in the chapter.
- Materials** lists the materials that are suggested for use in teaching the lessons.
- Career Awareness** describes the career to be studied in that chapter, provides background information for discussion, and gives a caption for the photograph illustrating the career.
- Special Notes** appear when there is something of a special nature for the teacher to know before beginning the chapter. It might include suggestions for collecting or sending away for materials that are needed for a suggested project, making arrangements for a guest speaker, starting a survey, etc.

Lesson Commentaries

Daily lesson commentaries generally provide varied approaches to teaching the lessons. Each lesson commentary, in the side columns of the *Teacher’s Edition*, contains the following categories:

- Objectives** for each lesson are stated in behavioral terms. These objectives state very specifically what a child ought to be able to do at the end of the lesson.
- Pacing** offers suggestions for individualizing the lesson assignments according to three levels:

- Level A: a minimum course
- Level B: an average course
- Level C: an enriched course

- Vocabulary** lists new words and terms introduced in the lesson.
- Materials** lists teaching aids helpful for teaching the lesson.
- Related Aids** keys the appropriate supplementary components on which the lesson is based.
- Background** provides a meaningful setting for mathematical concepts on which the lesson is based.
- Suggestions** usually provide readiness-type learning experiences which encourage children’s involvement. This section contains the Initial Activity that should be completed before using the pupil page.
- The **Using the Book** section provides specific teaching instructions for the lesson.
- Additional Activities** provide varied learning experiences such as mathematical games, research projects, experiments, etc. that represent additional practice or enrichment.

Extra Practice keys to the appropriate exercises in the *Practical Exercises* at the back of the book. More exercises may also be found in this section. The assignment of these additional exercises is left to the discretion of the teacher. *Answers* to all exercises are provided on the reduced pupil page or in the side column.

Supplementary Materials

Duplicating Masters provide extra practice for selected lessons, graph paper, dot paper, cut-outs for activities, nets for geometry and additional chapter tests.

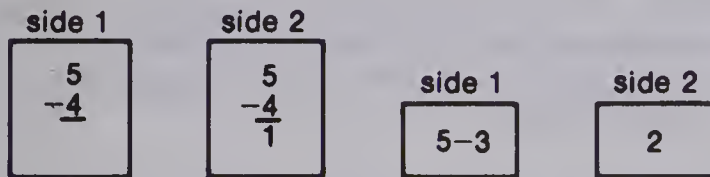
BFA Computational Skills Kits I & II provide a diagnostic/prescriptive program for both instruction and practice. Simple placement tests help identify each child’s level.

ACTIVITY RESERVOIR

BASIC FACT PRACTICE CARDS

Use: To practice skills in basic addition and subtraction facts through sum 18

Materials: Oaktag, felt tip marker, make cards for all the combinations through sum 18, numeral cards through 18



Players: One or more, or two teams

The Game: Separate the class into two teams. The teams take turns. A child on one team selects a numeral card such as 4. Children on the other team select addition or subtraction practice cards whose answers are four and stand by the child with the numeral 4. A point may be given for each correct response. (Children should soon learn that it is to the advantage of the team choosing the numeral card to choose a number carefully.)

In addition to the usual flash card elimination “bees”, children may practice facts individually by looking at each addition or subtraction card, naming the answer, and then turning the card over to check.

BATTLE

Use: To practice comparing numbers

Materials: Small numeral cards (about 2" by 3"), one numeral on each (0-99)

Players: Two, three, or four

The Game: The card game “Battle” can be played with two children. Shuffle the deck of cards. Each child gets half the deck. Both children hold their decks face down. Each child turns over one card at the same time. The child whose card has the higher numerical value wins both cards. (You might display a number line in order to prevent disagreement over which of two numbers is greater.) If both children display card with the same number, have each child turn over another card. These second cards determine the outcome of the tie. The winner is the child with the most cards (or all the cards) at the end of the game.

This card game can also be used to practice the concepts of less than and greater than.

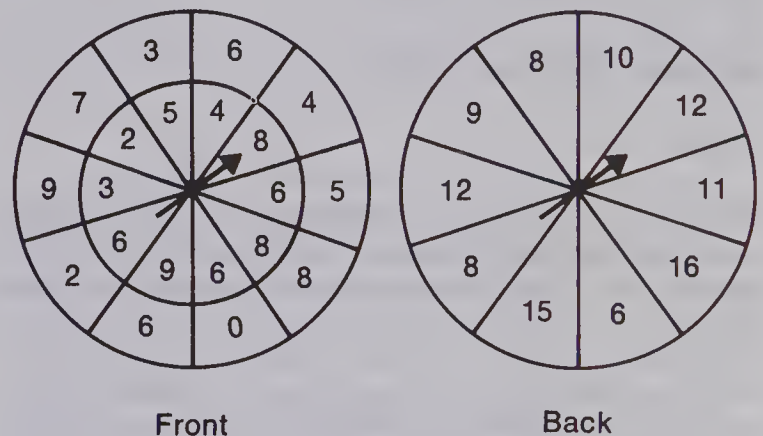
BASIC FACT WHEELS

Use: To practice basic addition and subtraction facts

Materials: Oaktag, compass, scissors, brass fasteners

Players: One or two

The Game: The child spins the arrow to show two numbers. Then the child adds the numbers and gives the answer. The child receives one point for each correct answer. The answer to each basic fact will appear on the back of the wheel as shown below:







To practice basic subtraction facts, prepare a wheel similar to the one above. The numbers in the outer circle should be larger than those in the inner circle. The child spins the arrow and subtracts the number in the inner circle from the number in the outer circle.

BINGO

Use: To practice basic facts in addition and subtraction; to practice recognizing equivalent names for given numbers; to practice recognition of various expanded numerals and geometric shapes

Materials: Counters (as construction paper disks), cards with descriptions of cells, game boards like the one pictured below (Game boards should reflect the child's level of accomplishment.)

			
3 + 1			

Sample descriptive cards for the board above might include a wide variety of basic facts and even expanded numerals. For example, one call might be “Apple, 4”. In one cell, below the apple, 3 + 1 can be found; the child covers the

cell with a counter. Not all children will have a cell which matches the call. Later, the game may be extended to 25 cells using the letters BINGO instead of pictures of fruit.

Players: Any number

The Game: Each player has a game board. Cut some index cards in half and use them to write descriptive clues on. Mix the clues by shuffling the cards. Choose a card and read it to the group playing. Keep the cards called separate for checking.

As in regular Bingo, the first child to completely cover a horizontal, vertical, or diagonal straight line wins.

CONCENTRATION

Use: To practice basic facts

Materials: Eight index cards

Players: Two

The Game: Information is written on one side of an index card. Each card has one other card that matches it. For instance, $3 + 1$ and 4 are two cards that match. The cards are placed in an array with the information down. The first player turns over two cards. If the cards match, the child takes both cards. If the cards are not a match, they are turned back (information down) and the second child takes a turn. The players must concentrate to remember the information on the cards previously turned over to help them in making a match. The child with the most cards in a pile wins. As the children become adept, the number of cards in the array can be increased.

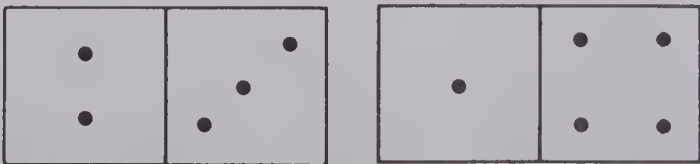
A concentration board with a matched pair might look like the one below.

	$10 - 5$		
5			

DOT SET CARDS

Use: To practice skills in basic addition and subtraction facts through sum 18

Materials: Oaktag, red and blue felt tip markers, make cards for all combinations through sum 18. To illustrate: sum 5



Players: One or more, or two teams

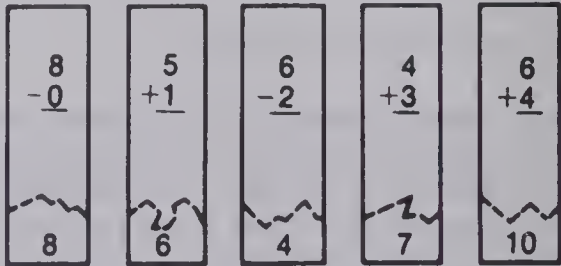
The Game: (1) Display the dot set cards involving sum 5. Pair two children. Tell them you will put your finger over the number of dots they are to think of as being taken

away. Have the children take turns writing a subtraction sentence that fits the situation. Each correct response gives the child one point. After all the cards are used, if one child has more points, that child may be declared the winner. (2) An individual child can sort through all the cards and collect those cards which, for example, show sum 6.

JIG-SAW PUZZLE CARDS

Use: To practice skills in basic addition and subtraction facts through sum 18

Materials: Oaktag, felt tip marker, make cards for addition and subtraction facts through sum 18 (No two cards should show the same pattern of dotted marks. Cut each card along the dotted line.)



Players: One or more, or two teams

The Game: Make two sets of cards for sum 6. Shuffle the parts of each set. Give a complete set to each of two children. Have them see who can fit the parts of each puzzle together first.

You might separate the children into two teams and stage a relay race. Display all the jig-saw puzzle cards for sum 7 on a table. The pieces should be mixed up so that no puzzle is complete. The members of each team come to the table in relays, assemble a puzzle, and go to the end of the line. The next player then goes forward and assembles a puzzle, and so on, until the first player is again at the head of the team. (There should be one more puzzle than there are members on a team.) The team who finishes first is the winner.

QUEEN'S PLATE (ROLLER DERBY; MOSPORT)

Use: To practice basic facts

Materials: Chalkboard or transparency, toy horses or cars, index cards on which problems have been written

Players: Teams of 4 or 5

The Game: A team advances its horse by correctly solving problems. A correct answer moves the horse to the next furlong marker.

The game can be made to fit the interests of the class just by changing the name to "Roller Derby" or "Mosport". The same rules apply, except that laps are counted instead of furlongs. An arbitrary number of laps may be set at the discretion of the teacher.

MATCHING THE SUM OR DIFFERENCE

Use: To practice basic addition and subtraction facts

Materials: Index cards on which to write addends such as: $3 + 1$, $6 + 4$, $2 + 2$, etc. These addends may be written in horizontal or vertical form. Cut the index cards in half so children will have an easier time holding them. Use the other half of these cards to make the matching sum cards. Have enough cards to cover all the basic facts that have been taught at the time the game is played.

Addition Cards

3 + 1

or

3
+ 1
—

Sum Cards

4

9 + 1

or

9
+ 1
—

10

Players: Two or more

The Game: Each player may be dealt four or more addition cards such as $3 + 1$, $6 + 2$, etc. The sum cards as 4 and 8 may be shuffled and placed in a stack on the table. Each child takes a turn drawing a sum card. If it matches ($3 + 1$ and 4), the child lays this pair on the table. If not, the card is discarded in another pile. If both children have unmatched cards after using all the cards in the sum pile, reshuffle the discard pile and have children continue playing until one child has no unmatched cards. This child wins.

This game can be adapted to match differences.

Subtraction Cards

10 - 1

or

10
- 1
—

Difference Cards

9

7 - 7

or

7
- 7
—

0

NUMBER CHART

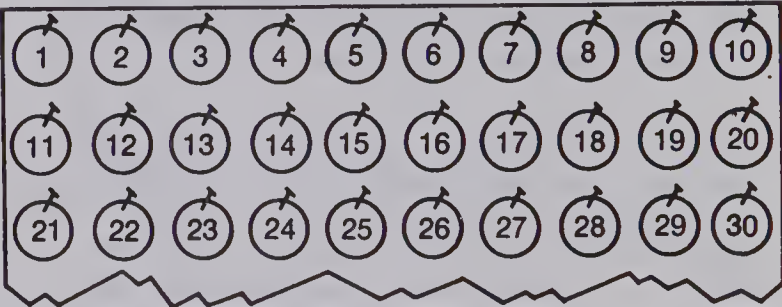
Use: To practice numeration skills

Materials: On about one square metre of plywood, drive ten rows of nails with 10 nails in each row. Cut 100 circles of cardboard (or oaktag) each about 5 cm in diameter. (Your school may have round cardboard discs trimmed with metal used for labeling keys. These make durable tags.)

Number the tags from 1 to 100, using a felt tip marker, or crayon. Use a paper punch to make a hole in the top center of each tag. Place these numeral tags in a box beside the Number Chart. The Number Chart can be hung on the wall or propped on the chalk rail.

Players: One or more

The Game: Give the child a direction, such as count by 1's to 30. The child then places each numeral tag on a nail to show the order of numbers from 1 to 30. Example:



(Have a table near by, so the child may lay out the tags, thus making it easier to find the numbers needed. This Number Chart can also be used for practice in counting by 2's, 5's, or 10's, reviewing the concept of before and after, and number sequences.)

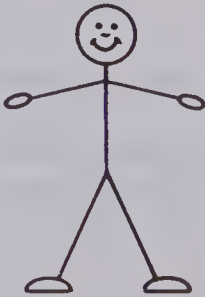
STOP THE MAGICIAN

Use: To practice skills for basic operations

Materials: Chalkboard or transparency for overhead projector, index cards on which exercises, such as $3 + 4$, have been written

Players: 2 or 3 teams (2 or 3 players)

The Game: Start with a stick person.



Alternating teams and rotating among players, the teacher (magician) poses exercises to be solved. For each error, erase a part of the body (hand, foot, etc.) of the stick person. The object of the game is to stop the magician from making the stick person invisible. (Each team has its own picture.) After all the exercises are completed, the team with the most complete stick person wins.

PROBLEMS OF THE WEEK

1. (Give the child descriptions of objects.) Find an object with numbers on it, an object that opens, an object with 2 round shapes in it, and so on. When you find an object that fits the description, draw it.

2. Ask about 10 children:

- what their favorite food is,
- the color of shirt or sweater they are wearing today. Record answers. Then have children make a picture graph using this information.

3. (On a piece of oaktag 10" x 10", draw twenty five 2" squares. In each square write an addition or subtraction fact appropriate to the children's level of accomplishment. Provide several sets of two different colored 1" x 1" numeral cards. Each player uses a different color.) Choose a square with a number fact in it to solve. Find the numeral card showing the correct answer and place it on top of the number fact. Alternate with a partner. The first player to answer all the number facts in one row or column wins.

4. (Each child will need a game sheet. Use these shapes on each game sheet: Δ , \square , \bigcirc . Provide numeral cards for 0-4.) Shuffle all the numeral cards and place them on the table face down.

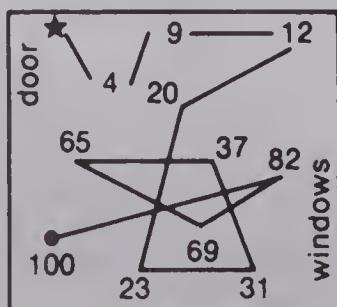
Game Sheet	Complete Game Sheet
$\square + \bigcirc =$	$\boxed{2} + \bigcirc(1) = 3$
$\square + \bigcirc =$	$\boxed{2} + \bigcirc(1) = 3$
$\triangle + \bigcirc = \underline{\quad}$	$\triangle(3) + \bigcirc(1) = \frac{4}{10}$

If the player is correct, he/she may choose the next child to start the game again.

The game can be reversed by having the child show an expanded numeral while the second player shows a set of blocks and chooses a two-digit numeral.

Draw a card; then write the number drawn in each shape of one kind on the game sheet. Repeat this procedure until all the shapes are filled. Find your sums.

5. Tape cards with a number from 1 to 99 (or 100) to objects in the classroom. The child will need a map, like the one shown below. Circle each number on the map as you find it. You must go in the order of the map.



6. (You will need two small boxes, one labeled "Guess the Number," one labeled "My Guess," and a number of small objects such as beads, disks, etc. to be counted. Place any number (from 1 through 99) of beads, in the "Guess the Number" box.) Guess the number of beads in the "Guess the Number" box. Write your guess on a piece of paper. Put your name on the paper also, and place it in the "My Guess" box. Before you go home today, we will count the beads together, and check the slips of paper to see how many children guessed the correct number of beads.

7. (Place 2 chairs upside down on the floor side by side. Tape a numeral card from 1 through 8 to each leg. The child will need several rubber jar rings. About 4 feet from the chairs draw a chalk line on the floor.) Toss the rubber jar rings at the upturned legs. Subtract the smaller number from the larger number. A point is scored for each correct answer. (This game may also be used to practice addition facts.)

8. (The child will need the number line and a work chart. Have the student complete the "Stop" column.)

0	1	2	3	4	5	6	7	8

Start	Stop	Number of Steps
		3
		2
		3

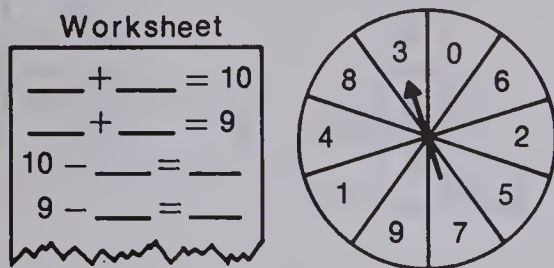
9. (Duplicate a sheet of coins on construction paper for each player. Make two quarters, six dimes, twelve nickels, and sixty pennies. Label each coin with its value, such as 1¢ on each penny, 5¢ on each nickel, and so on. Create a worksheet similar to this:)

Answers may vary.				

On the worksheet you are to cut and paste a correct combination of coins needed to buy the article pictured. Use more than one type of coin.

10. (Cut a circle, a triangle, a square, and a rectangle out of cardboard. Using a red felt tip pen draw lines on the shape to show fractional parts. Cut pictures of objects and shapes showing halves, thirds, fourths, and some divided into several unequal parts. Place each picture on a card. Include at least two examples of each fraction. You might include the fractional numerals. Put all the pictures into an envelope.) Place the four shapes showing different fractional parts at the top of a table. Match each picture with the shape that illustrates the same fraction.

11. (The child will need a worksheet of incomplete addition and subtraction sentences and a spinner.)

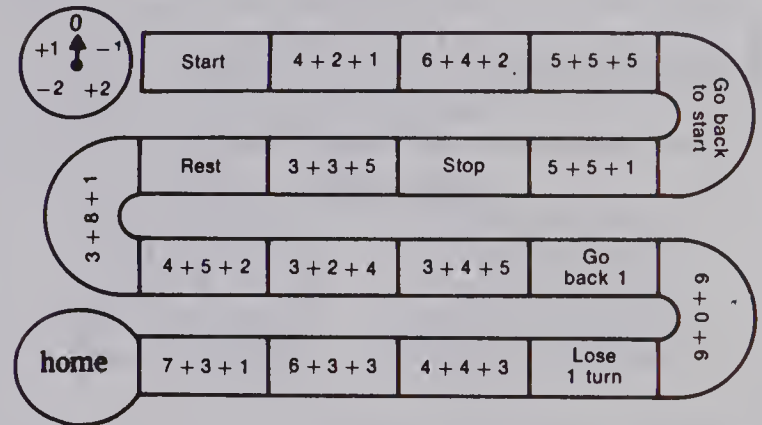


Begin with the first sentence on your worksheet. Spin the arrow. Write the number the arrow lands on in the first blank that appears in the sentence. Then make the sentence true. For example, if the arrow lands on "6", you would write $6 + 4 = 10$.

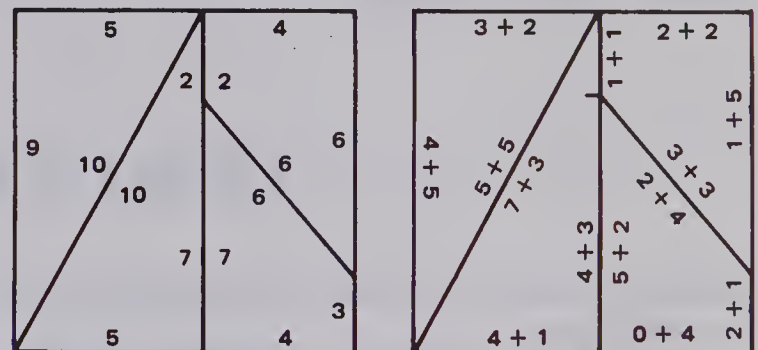
12. (The child will need 3 cubes of wood with a number from 0 through 5 written on each face.) Have the child roll the cubes and find the sum of the numbers on each face. Record 1 point for each correct answer. Keep a record of your score. After each person has rolled 5 times, the person with the smallest sum gets 1 point. The first person to score 10 points is the winner.

13. (Take 2 cubes of wood or foam. Show sets of pennies worth from 4¢ to 9¢ on each side of one block. Show pictures of articles with price tags showing 9¢ or 10¢ on each side of the other block.) Roll the blocks. Solve the problem by determining how many more cents are needed to buy the article. For example, if the article shown on the top face of the block costs 10¢ and the set of coins shown on the top face of the other block is worth 6¢, you would write $10 - 6 = 4$. You would need 4 ¢ more to buy the article. Alternate with a partner and record 1 point for each correct answer. The first person to score 10 points is the winner.

14. Place your button on start, and spin the dial. +1 means advance one; -1 means to go back one; and 0 means stay. Do what the number tells you to do. If you solve the problem correctly, spin the dial and continue, or you may alternate turns.



15. (The child will need the tagboard puzzle pieces.) Make each sentence true by writing the answer on top of it. Then cut out the 4 pieces. Match equal answers on the different pieces until you have put together a square.



16. (The child will need objects of varying sizes weighing exact kilograms from 1 to 5, a balance scale, and weights of 1, 2, and 4 kilograms.) Place a weight, for example 3 kilograms, on one side of the balance scale. Choose an object that you think weighs 3 kilograms and place it on the other side of the scale. Does the object weigh 3 kilograms? If it does, remove the object and the weight; if it doesn't, try again.

17. (Display a chart divided into four columns. Place a picture of a circle at the top of the first column, a square in the second column, a triangle in the third, and a rectangle in the fourth column. Place the names of objects in the classroom on cards and tack them to the appropriate objects.)

Look at the objects with names on them carefully. Place the names of objects under the shape on the chart that the objects most closely resemble. (For example, write "door" under the rectangle.)

18. (Duplicate the following code and messages similar to the one below on a worksheet. Each message should involve word names for numbers, or measuring words, such as litres, centimetres, kilograms.)

Code													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
s	x	i	e	v	n	g	h	f	t	w	r	o	u

Activities									
10	8	12	4	4	9	13	14	12	
t	h	r	e	e	f	o	u	r	

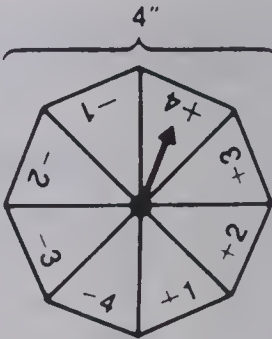
Use the code to decode each message.

19. (Indicate measures in centimetres. The child will need a teacher drawn map of the classroom, large enough for the child to write measurements on, and a ruler. The map could show the names and outlines of objects in the room. A master answer sheet would be available.) Give these directions:

Complete your map by measuring each object shown and placing your measurements on the appropriate objects. You may compare your findings with other children. If your measurement of an object differs from another child's, you should both measure the object again. (You may wish to have the children measure small objects using a centimetre ruler.)

20. (The child will need a button or disc.) Begin at start. Spin the arrow. Add or subtract that number from the number in the box where your button is. If your answer is correct, advance your button to the next box and spin again. If incorrect, spin again and give your answer. You can alternate turns with a partner.

10	4	8	7
6			9
9			5
4			10
Start	8	5	6



CUMULATIVE TEST

These test items cover a representative sampling of the objectives for Grade 1.

The items are written in a multiple-choice style in order to give the child an opportunity to experience the type of format that may be used on standardized tests.

Administering the Test

- Give each section of the test at a separate time during the day or parts on different days.
- Gather all materials necessary for the test beforehand. Decide whether crayons or pencils should be used.
- Read through each section at least once before administering.
- You may write the sample test items on the chalkboard and do these with the children before beginning the test.
- Read each question to the child. The child is to read the possible answers and mark a response as directed. Give any explanation you feel is warranted so that the child fully understands the question. Answer questions raised but do not give help.
- Move around to see if pupils are following directions. Do not let pupils move ahead to the next item until you give instructions to do so. Then announce the next number and read the question. Give sufficient time to respond, but pace the testing at a reasonable speed.

Answers to Test

Section I 1. third fish 2. 3 3. 8 4. 30 5. 18 6. 88 7. 90 8. 35 9. 39 10. 70 11. 89 12. set of lemons 13. set of cups 14. 40 15. 60 16. 59 17. 13 18. 50 19. 89 20. 100 21. 46 22. 70 23. 93

Section II (columns left to right) Addition

1st column: 9; 10; 40; 76; 11
2nd column: 11; 12; 90; 98; 8
3rd column: 8; 10; 29; 12; 10

Subtraction

1st column: 2; 5; 10; 34; 4
2nd column: 4; 6; 40; 38; 3
3rd column: 3; 4; 30; 40; 5

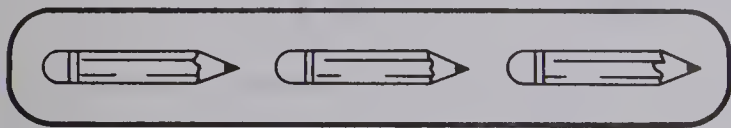
Section III 1. 5 2. 9 3. 37 4. 6 5. 3 6. 6 7. 23 8. 12 9. 2nd figure 10. 1st figure 11. 10¢ 12. 5¢ 13. 25¢ 14. 2nd clock 15. 7 16. 3rd figure 17. 15¢ 18. 3rd toothpick from top 19. last figure 20. 35¢ 21. half past 2

Section I – Concepts

1. Which is the third fish?



2. How many pencils?



0 1 2 3

3. How many dots?



3 5 8 9

4. Which number is missing?

27 28 29 ____ 31

17 20 30 32

5. Which number is missing?

14 16 ____ 20 22

10 12 18 28

6. Which number is missing?

87 ____ 89 90 91

77 83 88 93

7. Which number is missing?

50 60 70 80 ____

10 30 90 100

8. Which number is missing?

30 ____ 40 45 50

20 25 35 53

9. Which number is just before 40?

14 30 39 41

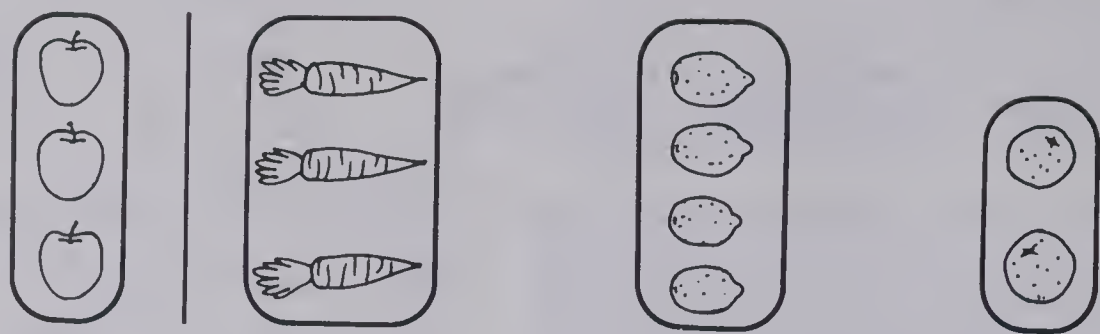
10. Which number is just after 69?

68 70 90 96

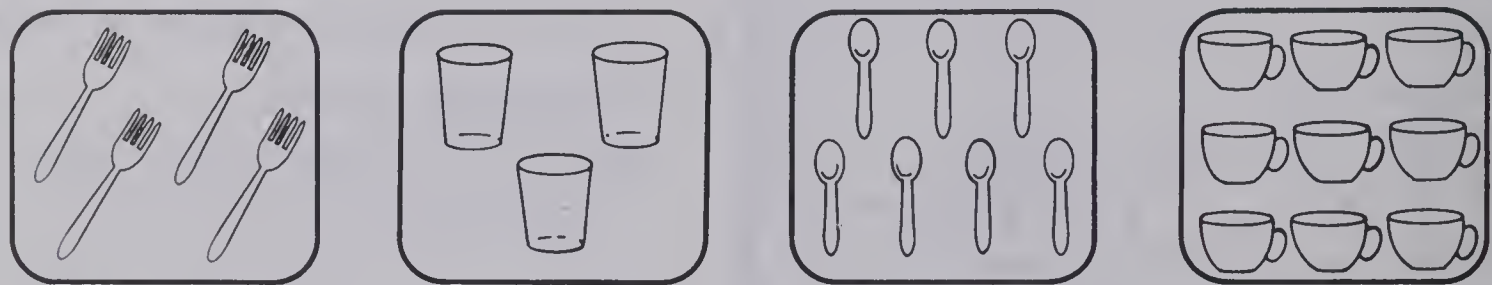
11. Which number is between 88 and 90?

80 87 89 91

12. Which set has one more member than the set of apples?



13. Which set has the most members?



14. Which is the largest number?

30 37 29 40

15. Which is one greater than 59?

49 58 60 69

16. Which is the smallest number?

70 59 73 76

17. Which is thirteen?

13 30 31 33

18. Which is fifty?

5 15 50 50

19. Which is eighty-nine?

80 89 98 99

20. Which is one hundred?

1 10 70 100

21. Which is 4 tens + 6 ones?

44 46 64 66

22. Which is 7 tens + 0?

7 17 70 77

23. Which is 90 + 3?

39 63 90 93

Section II – Computation

Add.

$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$

8 9 10 11

$$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} 10 \\ + 30 \\ \hline \end{array}$$

20 30 40 50

$$\begin{array}{r} 50 \\ + 26 \\ \hline \end{array}$$

66 70 76 86

$$4 + 7 = \underline{\hspace{2cm}}$$

9 10 11 12

$$\begin{array}{r} 2 \\ + 9 \\ \hline \end{array}$$

10 11 12 13

$$\begin{array}{r} 4 \\ + 8 \\ \hline \end{array}$$

10 11 12 13

$$\begin{array}{r} 40 \\ + 50 \\ \hline \end{array}$$

50 70 80 90

$$\begin{array}{r} 64 \\ + 34 \\ \hline \end{array}$$

30 88 90 98

$$\begin{array}{r} 3 \\ 2 \\ + 3 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$$

8 9 10 11

$$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} 22 \\ + 7 \\ \hline \end{array}$$

9 19 20 29

$$6 + 6 = \underline{\hspace{2cm}}$$

10 11 12 13

$$\begin{array}{r} 2 \\ 5 \\ + 3 \\ \hline \end{array}$$

7 8 10 11

Subtract.

$$\begin{array}{r} 8 \\ - 6 \\ \hline \end{array}$$

2 3 4 6

$$\begin{array}{r} 11 \\ - 7 \\ \hline \end{array}$$

2 3 4 5

$$\begin{array}{r} 9 \\ - 6 \\ \hline \end{array}$$

2 3 4 6

$$\begin{array}{r} 12 \\ - 7 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} 10 \\ - 4 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} 9 \\ - 5 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} 50 \\ - 40 \\ \hline \end{array}$$

10 20 30 40

$$\begin{array}{r} 70 \\ - 30 \\ \hline \end{array}$$

20 40 50 60

$$\begin{array}{r} 90 \\ - 60 \\ \hline \end{array}$$

20 30 40 60

$$\begin{array}{r} 39 \\ - 5 \\ \hline \end{array}$$

23 24 33 34

$$\begin{array}{r} 68 \\ - 30 \\ \hline \end{array}$$

28 30 38 48

$$\begin{array}{r} 89 \\ - 49 \\ \hline \end{array}$$

30 39 40 49

$$12 - 8 = \underline{\hspace{2cm}}$$

3 4 5 6

$$10 - 7 = \underline{\hspace{2cm}}$$

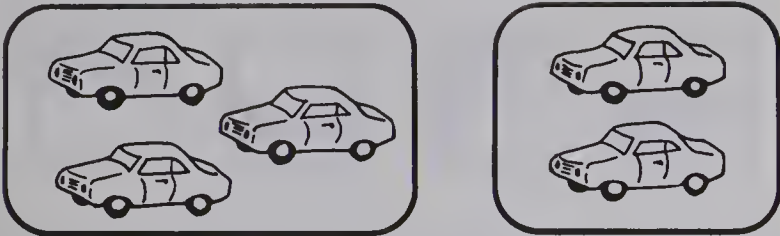
1 2 3 4

$$11 - 6 = \underline{\hspace{2cm}}$$

4 5 6 7

Section III – Applications

1.



How many in all?

- 1 3 5 6

2.



How many cents in all?

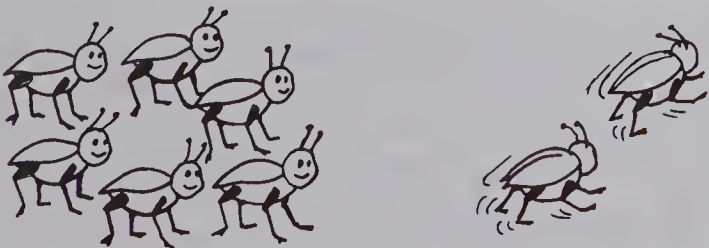
- 4 5 9 10

3.

24 red bikes.
13 blue bikes.
How many bikes in all?

- 11 27 34 37

4.



How many are left?

- 5 6 8 10

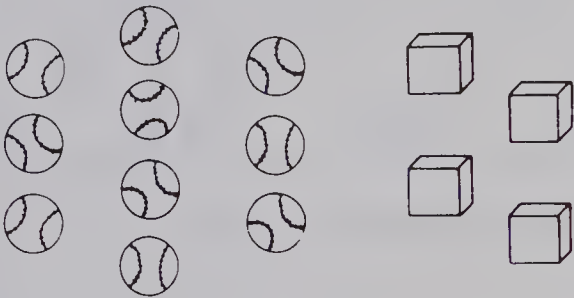
5.



How many are left?

- 0 3 5 8

6.



How many more  ?

- 6 5 10 14

7.

26 birds.
3 fly away.
How many stay?

- 13 23 26 29

8.

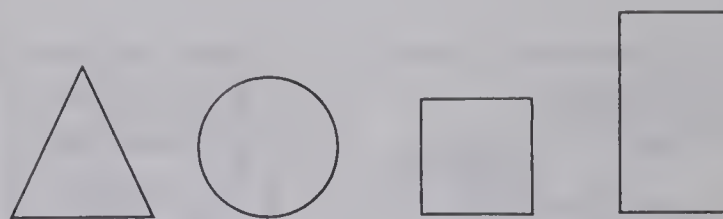
32 girls.
20 boys.
How many more girls?

- 12 22 42 52

9. Which is a square?



10. Which is a triangle?



How many cents in each coin?

11.



1¢

5¢

10¢

12.



5¢

10¢

25¢

13.

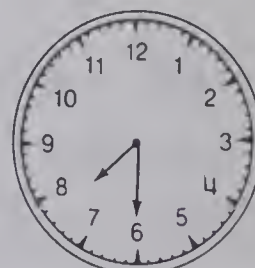
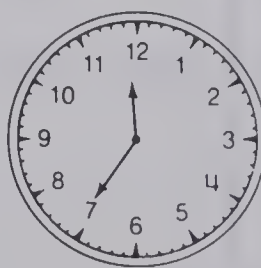
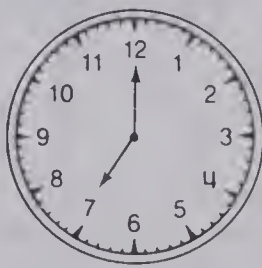
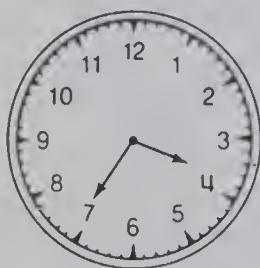


5¢

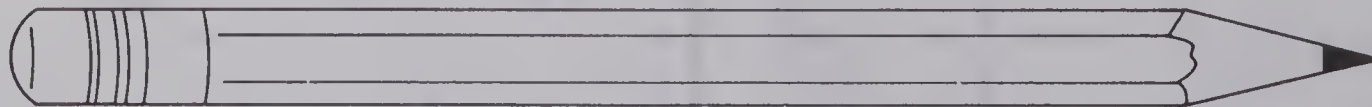
10¢

25¢

14. Which clock shows 7 o'clock?



15. The pencil is how many  long?



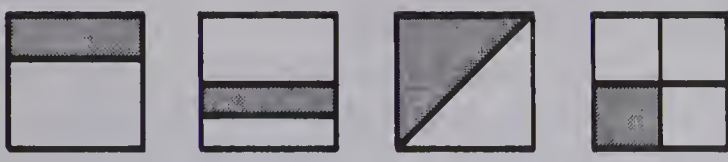
1

7

8

9

16. Which shows one half?

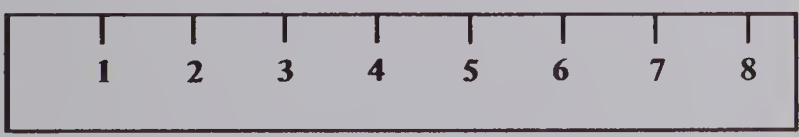
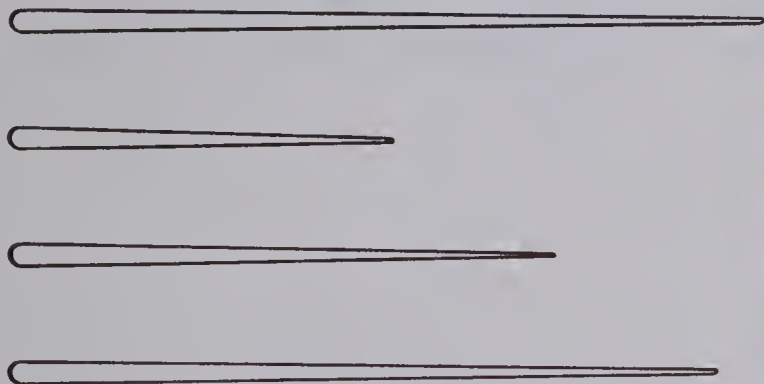


17. How many cents?



2¢ 10¢ 15¢ 20¢

18. Which toothpick is about 6 units long?



19. Which shows one third?

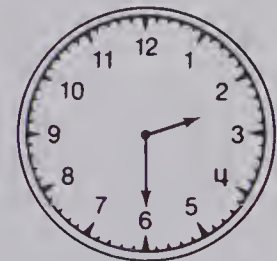


20. How many cents?



15¢ 25¢ 30¢ 35¢

21. What time is shown?



2 o'clock half past 3
half past 2 6 o'clock

CHAPTER 1 OVERVIEW

LEVEL 1

Groups, members of groups, and relationships between groups (more, as many as and one more) are presented in this chapter. These ideas are used in developing the concepts of number and number relations. Arranging groups in a “one more” order prepares the child to understand the ordering of numbers (introduced in Chapter 2) for counting.

OBJECTIVES

- A To match members of two groups one-to-one
- B To compare groups using the concept more
- C To show a group that has as many members as another
- D To recognize and construct groups with one more member than a given group
- E To recognize groups with the same number of members

VOCABULARY

set 4
member 4
match 2
as many as 3
sets that match 3
more 4
one more 5
ring 5
order 7
same number 8

BACKGROUND

1. A group is a collection of objects. Each object in a group is a member of the group. When appropriate, stress that the “more than” relationships are independent of physical characteristics such as size, color, shape, mass, and so on.
2. Matching the members of two groups consists of establishing a one-to-one relationship, so far as possible, between the members of the groups. Both groups are assumed to be finite. One member of the first group is matched with any member of the second group. Then another member of the first group is matched with any other member of the second group. This process continues until all the members of one group are matched. If any members of either group are unmatched, there are more members in that group and fewer in the other. When there are no unmatched members in either group, there are exactly as many members in each group. In this case, the groups are matching groups and so are equivalent. Equivalent groups have the same number of members.

MATERIALS

a ball
a straw
crayons
10 blocks
5 cups
5 spoons
pictures, as 3 red birds and 5 yellow flowers
colored square made of felt or construction paper
flannel or magnetic board
dot set cards for 1 through 4 members
(See Activity Reservoir.)

CAREER AWARENESS

Automobile Salesworkers [2]

Automobile salesworkers are the important link between the automobile dealers and the customer. Some deal with only new or used cars, while others may sell trucks. They sell cars by showing the customer cars in the showroom or outside in the lot. Automobile salesworkers tell customers the prices for the new cars as well as the prices for the cars the customers are trading in. These amounts may also require the approval of the sales manager. When an automobile is sold, salesworkers usually make out the sales sheet, register the car, and get the license plates ordered and installed.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that automobile salesworkers must be able to buy and sell autos. Most automobile salesworkers work on a commission basis. If they do not sell cars, they will not earn a salary.

Art description: Within the community scene, there is a used car lot and a new car display center.

BULLETIN BOARD

1. Draw a large mural of a classroom, the neighborhood, or the inside of a grocery or toy store. Lead a discussion about the mural and encourage children to describe sets of things they see in it. For example, if you draw a classroom they might describe a set of books. After describing the set have each child draw a picture of the set he/she described and display it near the mural.

The set pictures the children draw may be used for later activities such as determining if two sets have as many, more or fewer members; counting; associating a number with a set and so on.

2. You may wish to organize the following bulletin board project which can be used in developing the concept of a set and then comparing sets. Have each child draw a picture of the set of people in his/her family (including themselves). Assist the children in completing this title, “___ Family,” by filling their names in the blank. Display the pictures on the bulletin board using a title such as “Our Families”.

This bulletin board display may be used for activities such as naming the members of each child’s family, determining families with more, less or as many members, identifying sets with one more or one less member, pairing and ordering sets.

3. Organize the following bulletin board project for studying sets. Tack 4 set pictures to the top of a 4-column chart as shown below.



Have the children draw or cut out pictures from magazines showing sets with 1 through 4 members. Assist the children in tacking their sets under the set of stars with as many members. You can adapt this bulletin board to include work with sets having more or one more member.

OBJECTIVE

To recognize and identify objects in a picture

PACING

Level A	All (guided)
Level B	All (guided)
Level C	All (guided)

SUGGESTIONS

Initial Activity Have the children look at the objects around the classroom. Point out an item, such as a pencil. Ask the child to name the item and describe what we use it for. You might vary the activity by describing the item and have the child find it. For example, "It is yellow and we write with it." The child should find a pencil. Continue this activity until each child is familiar with identifying objects in the classroom.

You may wish to discuss what auto salesworkers have to do for their job. Ask leading questions such as, "Do you think they have to talk to a lot of people? Know about cars? Do a lot of paper-work?" etc. You may also wish to discuss the consumer aspects of buying a car, such as: conserving fuel, pollution devices, traffic jams, etc.

ACTIVITIES

1. Have the child identify common objects in the classroom. Ask the child to touch an object, such as a chair or eraser.

2. The child can cut pictures of autos and trucks from old magazines.

3. Play a game involving the identification of pictured objects including cars and trucks. On a large piece of tagboard, draw a picture of a beanstalk. Attach to each leaf of the beanstalk a picture of an object. The child is to begin at the bottom of the beanstalk and, by naming each pictured object, try to climb to the top.

4. Toy cars and trucks may be used to set up an auto sales lot in the classroom. The child may pretend to be an auto salesworker.

5. Have the child draw a picture of the community similar to the one on page 1. Then discuss the picture, having the child identify and describe each object pictured.

Selling Autos



AT HOME Let the child find similar objects in your community.

Identifying Objects Activity (one) 1

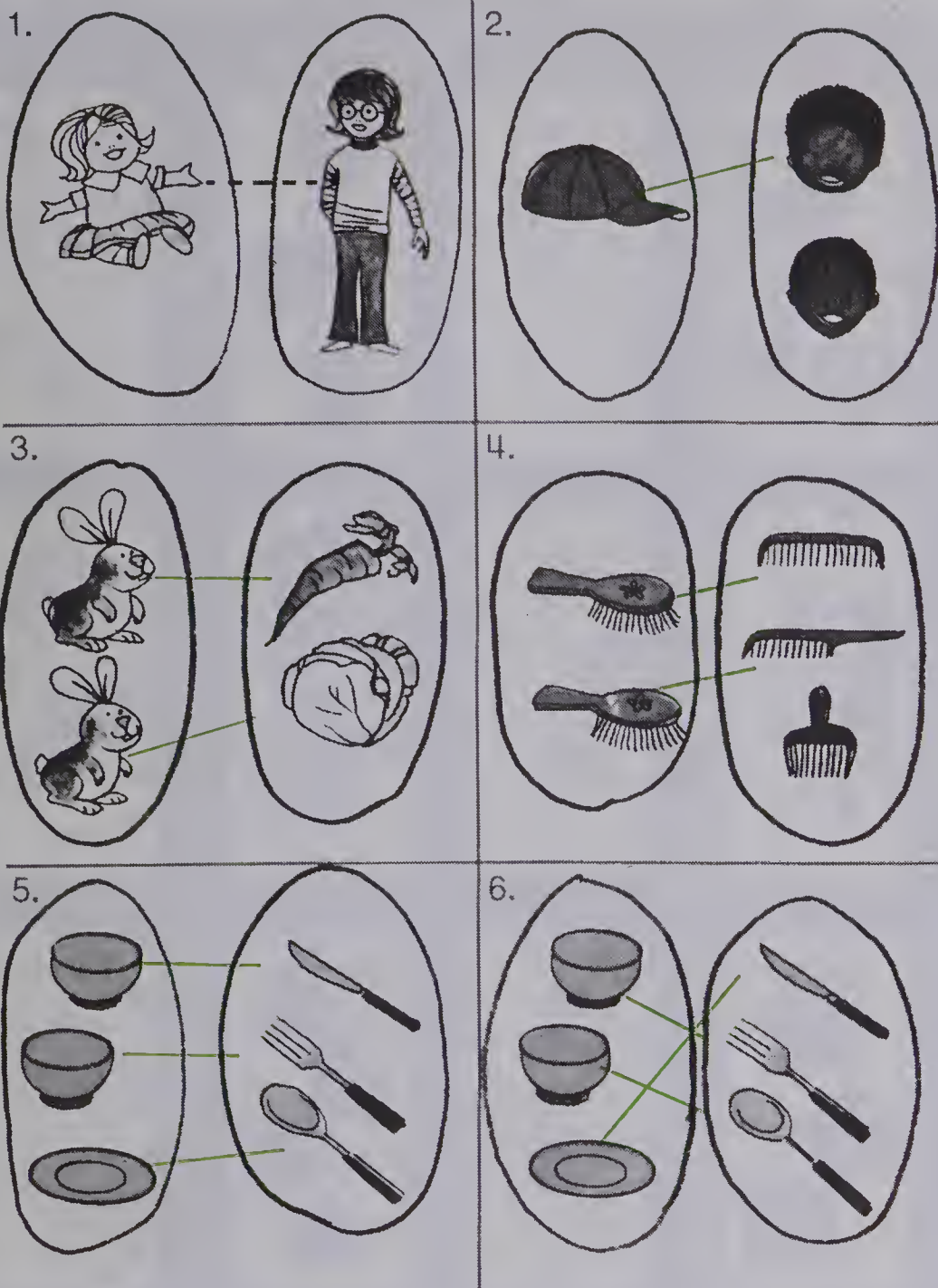
Using the Book Top of page: You may ask the child to point to and name different objects in this picture. Ask the child to point to the auto store in the picture at the top right corner. This place sells new cars. Have the child find the used car lot in the picture. Explain that this place sells cars that have already been used for a while by someone else. You may have the child name different kinds of cars and trucks on the streets in this picture, as family car, police car, taxi, fire truck. See Career Awareness in the Chapter 1 Overview.

Bottom of page: Direct attention to and discuss the pictures of different objects on the bottom part of the page. Ask the child to ring each object that can be seen in the picture on the top part of the page; for example, have the child trace the ring around the parking meter and find it in the picture above. Note that some objects will not appear in the picture above and should not be circled.

Some children may be encouraged to count as many objects as they find.

At Home: After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

Matching



2 (two) Matching members of groups

Using the Book Panel 1: Have the child describe each group. Explain that the line shows that we have matched the doll and the girl. Have the child trace over the line to show matching.

Panel 2: Have the child match the cap with one of the boys. Elicit that one boy is left unmatched.

Panels 3-4: Tell the child to match each object of one group with an object of another group.

Panels 5-6: Explain that two groups are shown in each panel. The same groups appear in panels 5 and 6. The child is to match the objects of the two groups in panel 5 and then match the objects of the two groups in panel 6 in a different way.

OBJECTIVE

To match members of two sets

PACING

Level A All (1-4 guided)

Level B All (1-3 guided)

Level C All (1-2 guided)

VOCABULARY

match

MATERIALS

3 cups, 5 spoons

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activities 1. Ask 3 boys to stand opposite 3 girls. Have a boy and girl hold hands and explain that a member of one set is matched with a member of the second set. Continue this until all the children are matched. Elicit that each boy is matched with a girl, and each girl is matched with a boy.

2. Repeat activity 1 using 3 cups and 5 spoons.

ACTIVITIES

1. Have 4 boys stand opposite 3 girls. Have a boy take a girl's hand. Explain that two members have been matched. Continue until others are matched. Point out that one boy is not matched. Then have the children match themselves in a different way.

2. You may provide a worksheet showing pictures of glasses. The child can draw a straw in each glass.

3. The child can cut pictures from old magazines showing things matched, such as a coat on a hook.

OBJECTIVES

To determine when there are as many members in one group as in another group, by matching
To construct a group with as many members

PACING

Level A All (guided)
Level B All (1, 2, and 5 guided)
Level C All (1 and 5 guided)

VOCABULARY

as many as, groups that match

MATERIALS

3 cups, 3 spoons

SUGGESTIONS

Initial Activity Display 3 cups and 3 spoons. Have the child match the cups and spoons. Ask, "Are there any unmatched members? Are all the members in each group matched? Are there as many cups as spoons?" Explain that we say that the groups match.

ACTIVITIES

1. Have 4 girls and 4 boys stand opposite each other. Then have each girl reach out to take the hand of a boy. Elicit that each girl is matched with a boy and each boy is matched with a girl. Stress that there are as many girls as boys and as many boys as girls.

2. Make dot group cards with 1-4 dots:



Give the child some counters. Display one dot card at a time. Have the child display exactly as many counters. See the Activity Reservoir in the front of the book.

3. The child can use groups of things found in the classroom to display groups that match.

As Many As

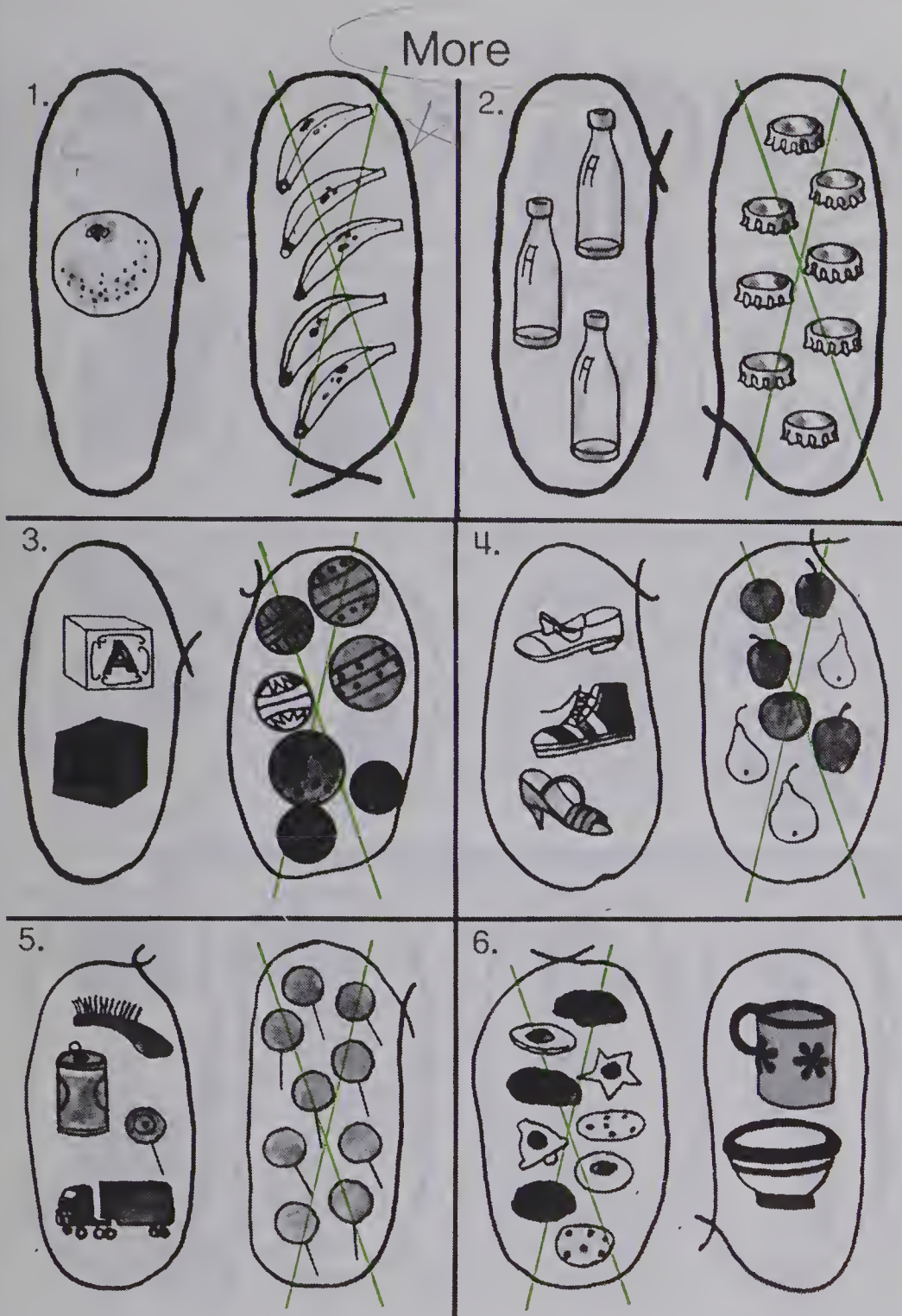


Using the Book Panel 1: Ask the child to trace the line from the dog to the bone. Stress that these groups match. There are as many dogs as bones.

Panel 2: Have the child draw a line to match each apple with a banana. Then ask, "Are there as many in each group? (yes)" The child can color the matching groups.

Panels 3-4: For each panel, have the child match the members of the groups. Elicit the idea that there are as many members in one group as in the other. Have the child color the group with as many members.

Panels 5-6: In each panel, have the child draw a group of rings with as many members as the group shown.



4 (four) Concepts of more, without counting

Using the Book The child is not to count or match the members of groups to tell which is more. Instead, just by looking and without counting have the child recognize which group has more members.

Panel 1: Ask the child to point to the picture of the orange and then to the picture of the group of bananas. Ask, "Which group has more members?" Explain that the group of bananas has more members. Then have the child draw an X on the group of bananas.

Panels 2-6: For each panel, have the child look at both pictures and draw an X on the group that has more members.

OBJECTIVE

To tell which of two groups has more members

PACING

Level A All (1-4 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

more

MATERIALS

10 blocks, 2 chairs, 10 crayons

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activities Explain: "Objects or things in a group are members of the group. The bananas are members of the group of bananas. In box #4 the pears are members of the group of fruit."

1. Place 7 red blocks (or squares of construction paper) in one group and 3 blue in another group. Ask the child to tell, without counting, which group seems to have more members. Then have the child place each of the 3 blue blocks on a red block. Stress that there are some red blocks without blue blocks on them, so there are more red blocks.

2. Show 2 chairs and 10 crayons. Ask, "Which group has more members?" Elicit the idea that size, shape or color of the members of the two groups does not affect the "more" relationship. Stress that the group of crayons has more members.

OBJECTIVES

To identify which of two groups has one more member
To construct a group with one more member

PACING

Level A	5 All (guided)
	6 All
Level B	5 (1-2 guided)
	6 All
Level C	5 All (1-2 guided)
	6 All

VOCABULARY

one more, ring

MATERIALS

4 cups, 5 spoons

SUGGESTIONS

Initial Activity Display a set of 4 cups and a set of 5 spoons. Have the child match the members of the two groups. Develop the ideas that there are more spoons than cups, and that there is one more spoon than there are cups.

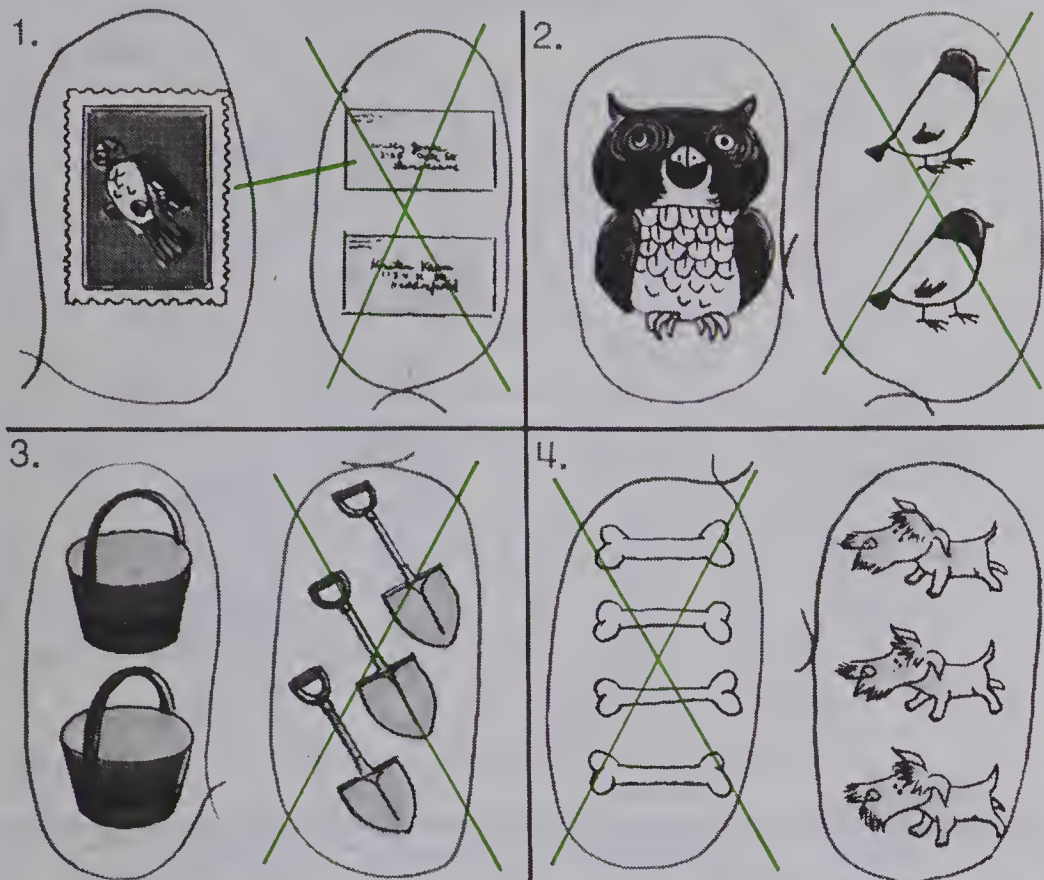
One More

Concept of one more, by matching (five) 5

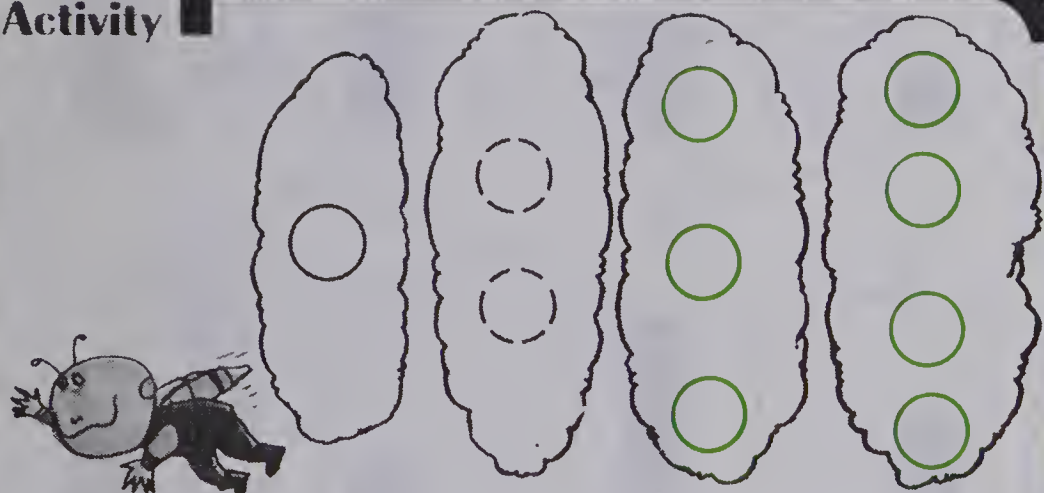
Using the Book Panel 1: Have the child describe each group. Ask the child to point to the dog and then to the doghouses. Then have the child trace the line from the one dog to one doghouse. Ask, "Which group has one more? (set of doghouses)" Have the child point to this extra object and draw an X on this group.

Panels 2-8: For each panel have the child match the members of the two sets and then draw an X on the set with one more member.

Do not insist on using the words 'sets' and 'members', but rather use words that have meaning for the students. Later you can use these words, but do not insist that the students use them.



Activity



6 (six) Practice • Activity: Drawing one more

ACTIVITIES

1. Dramatize “one more” using groups of boys and groups of girls holding hands (5 or less in each group).

2. Use dot group cards as described on page 8 with 1, 2, 3, or 4 dots each. Give the child some counters. Display one dot card at a time. Have the child display a group with one more member.

3. Use dot group cards as described on page 8 with 1, 2, 3, or 4 dots each. Have the child arrange the cards in a one more order.

Using the Book Panel 1: Have the child name the members in each group, (a stamp, some envelopes). Then ask the child to draw a line to match the stamp with an envelope. Ask, “Which group has one more member? (envelopes)” Then have the child draw an X on the group with the envelopes.

Panels 2-4: For each panel, have the child match members of the two groups and then draw an X on the group with one more member.

Activity: Have the child begin on the left and draw groups of rings on the puffs of smoke. Each group is to have one more ring than the group just before it.

OBJECTIVE

To arrange groups in order

PACING

Level A All (guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

order

MATERIALS

dot group cards with 1 through 4 members (See page 3.)

SUGGESTIONS

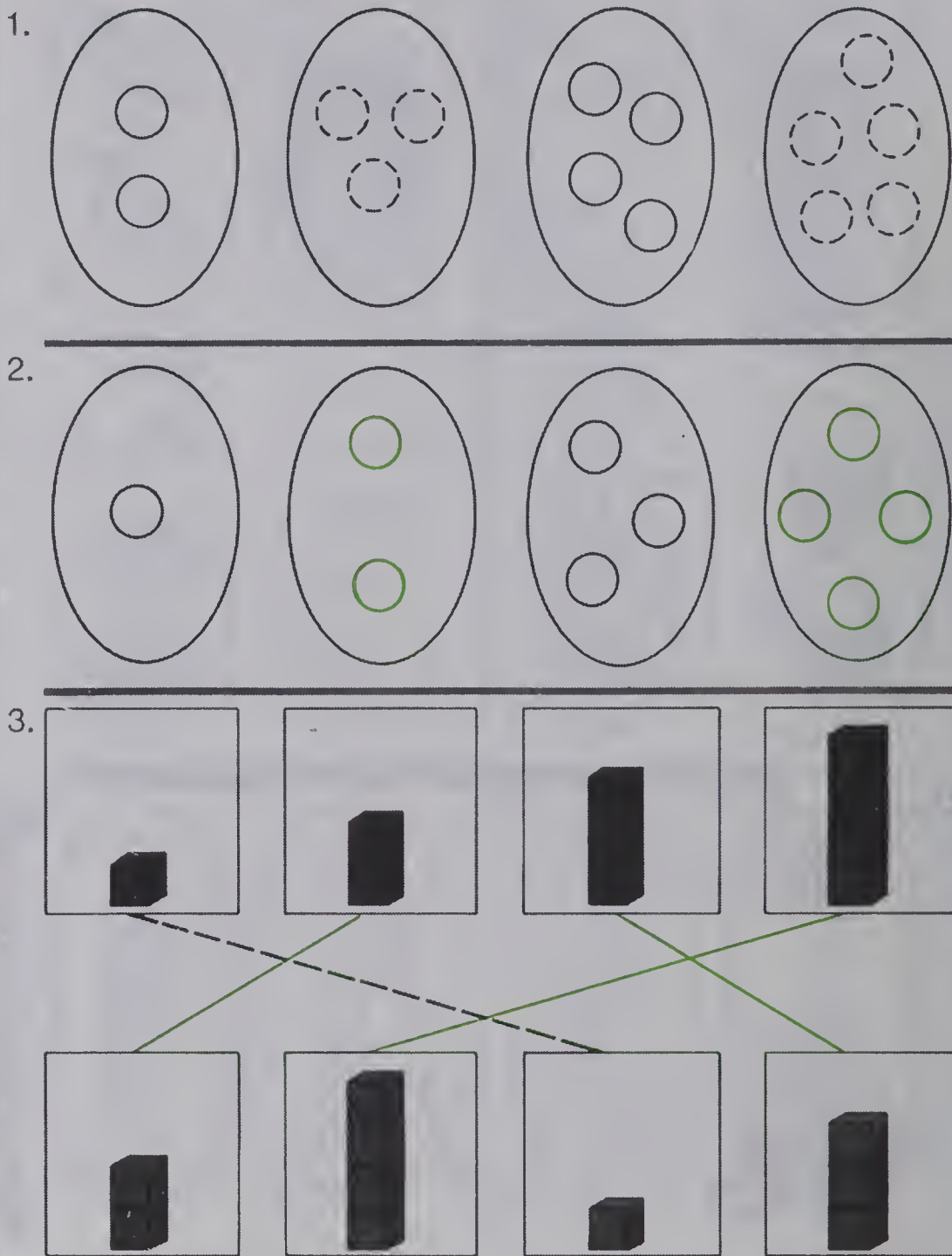
Initial Activity Display the dot group cards with 1 through 4 members in random order. Have the child find the group that contains one member and place it to the left. Then find the group that contains one more member than the first group. Continue until the other groups are in a one more order. Point out the one more relationship of the ordered group cards going from left to right.

ACTIVITIES

1. Order alternating sets of boys and girls (1 to 4 members) behind each other so that each set has one more member showing to the right.
2. Prepare a ditto sheet. For each row, have the child color a set with one more than the set above it.

3. Give the child a sheet of paper with five lines on it. Tell the child to make one colored dot on the top line. Then the child is to continue making sets of dots with one more in each row.

Ordering




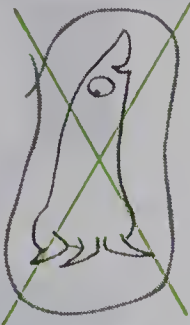
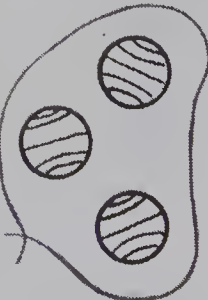


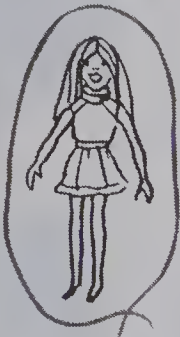
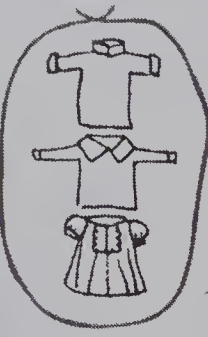
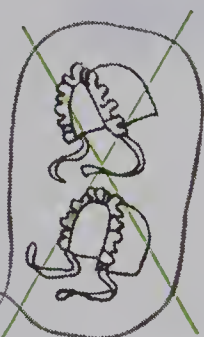

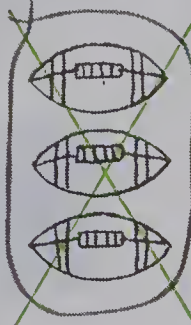

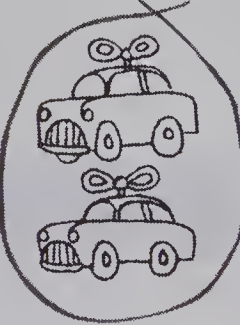

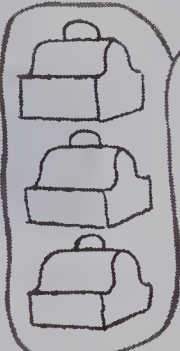


Arranging sets in one more order (seven) 7

Using the Book Panel 1: Ask the child to trace the group of rings that is one more than the first group. Then explain that the group just after each group is one more, so they are in a one more order from left to right.

Panel 2: Ask the child to draw a group of rings that is one more than the group just before it. Explain that the group just after each group is one more, and the groups are in a one more order from left to right.

Panel 3: Have the child point to the group of one red block in the top row of blocks. Then ask the child to point to the other groups of blocks in the top row. Elicit that each group, in order, has one more block. Ask, "Are the groups of blue blocks in the bottom row in a one more order? (no)" Explain that we will match the groups to get this row of groups in order. Have the child trace the line. Then have the child continue to match each group in the bottom row with the group in the top row that has exactly as many members.

Same Number

1.				
2.				
3.				
4.				

8 (eight) Finding matching sets: number readiness

OBJECTIVE

To identify groups with the same number of members

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

same number

MATERIALS

sets of familiar classroom objects

SUGGESTIONS

Initial Activity Display a group of three crayons. Have the child show as many books. Discuss the idea that there are as many members in one group as in the other group. Develop the idea that the groups match so they have the same number of members.

ACTIVITIES

1. Give the child pictures of groups (two pictures of 1 member each, of 2 members each, of 3 members each, and of 4 members each). Have the child match the groups that have the same number. Only recognition of exactly as many or same number, but not the specific number of each group, is required.

2. Display dot group cards, as described on page 3, in order (1 to 4 dots). The child is to lay down a row of counters, each row under the other, to show a matching group for each and then one more in each group.

3. Use Bulletin Board suggestion 3 in the Chapter Overview.

Using the Book Panel 1: Point out the picture of one dog on the left. Ask, "Which other group in this row has exactly as many?" Have the child draw an X on the seal. Explain that there are as many seals as there are dogs, so this group has the same number of members as the group of dogs.

Panels 2-4: Tell the child to draw an X on each group that has as many members as the first group in the row. To check, the child can be asked to draw a line from each member in the first group to each member in the group with the same number. Tell the child that if the groups match, the number of members is the same.

OBJECTIVE

To color as many as, in one more order

PACING

Level A All
Level B All
Level C All

MATERIALS

flannel (or magnetic) board, small pictures, colored squares

SUGGESTIONS

Initial Activity Using a flannel (or magnetic) board, show several pictures of a kind and color, as 3 red birds. Ask the child to place exactly as many squares of the same color on the board. Then, for example, put up 5 yellow flowers. Have the child place exactly as many yellow squares on the board.

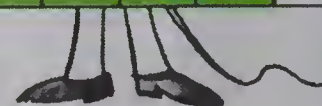
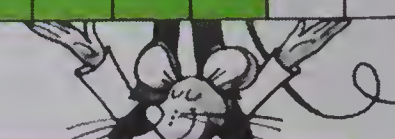
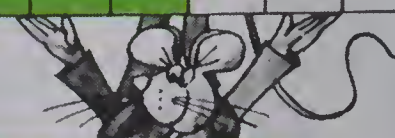
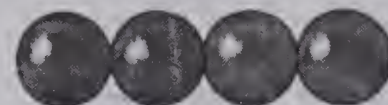
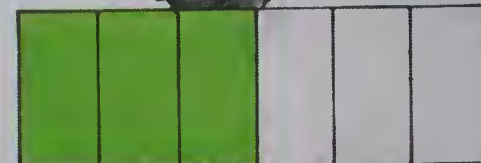
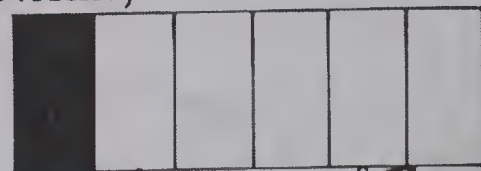
ACTIVITIES

1. You may provide separate pictures of groups, such as the pictures of marbles. Mix the group pictures and have the child put them in a one more order.

2. Provide a worksheet with several rows of squares. Have a different number of squares in each row. Have the child make as many dots as there are blocks in each row.

3. Have the child cut pictures from a magazine. Then have the child arrange the pictures in a one more order on a piece of paper. Tell the child to paste each group in a row, underneath each member in the group above. This can be displayed or taken home.

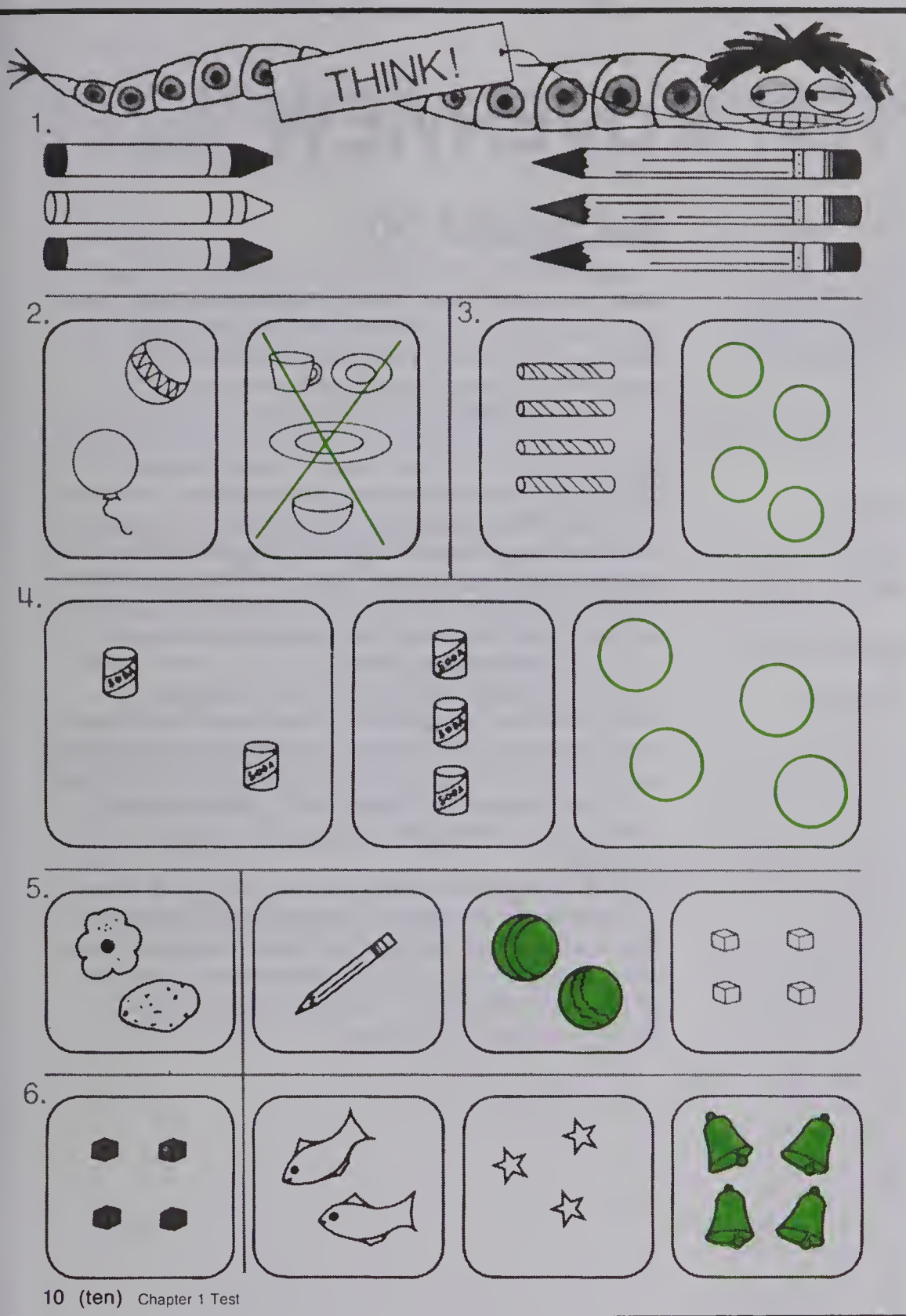
Coloring As Many



AT HOME Help the child find a picture of 1 object and paste it under the 1 marble, and so on

Activity: Coloring the same number (nine) 9

Using the Book In this activity the child will be coloring to show a one more order. Direct the child's attention to the picture of the red marbles. Then explain that exactly as many blocks have been colored red. Stress, "There are the same number of red blocks as red marbles." Then ask the child to color as many blue blocks as there are blue marbles. Now the child can continue the activity.



OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A	All
Level B	All
Level C	All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Use daily events as situations for reinforcing the concepts developed in this Chapter. For example, ask, "Are there as many milk containers as children?"

2. Give the child 5 bottle caps. Describe or show a group in the room with one, two, three, four, or five members. Have the child use the bottle caps to show a group with one more or as many members.

3. Display groups with one through five members in random order. Challenge the child to order the sets in a one more order, and tell the number of members in each set.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: The child is to match each member of the group of crayons with one member in the group of pencils by drawing lines between the pairs. [page 2 A]

Panel 2: Tell the child to put an X on the group that has more members. [page 4 B]

Panel 3: The child is to draw a group of rings that has exactly as many members as the group of candy sticks. [page 3 C]

Panel 4: Point out that the groups of cans are in a one more order. Then on the right, have the child draw a group with one more member than the previous group of cans. [page 5-7 D]

Panels 5-6: The child is to color the group that has the same number of members as the group on the left. [page 8 E]

CHAPTER 2 OVERVIEW

LEVEL 2

The concept of number as a property of a group is developed in this chapter. The child learns to count through nine to identify the number of a group with less than ten members, and to write the numerals 0 through 9. Numbers are used in the ordinal sense, from first through fifth. Horizontal and vertical picture graphs are introduced. The art theme for this chapter is "The Circus."

OBJECTIVES

- A To count the members of groups through nine
- B To write the numerals 0 through 9
- C To order the numbers zero through nine
- D To compare numbers through nine using the concepts greater than and less than
- E To compare numbers through nine using the concepts one greater than and one less than
- F To read horizontal and vertical picture graphs

VOCABULARY

numeral 11
zero 11
one 11
two 13
three 13
four 15
five 15
count 17
order 18
six 19
seven 19
eight 21
nine 21
greater than 23
one greater than 24
number line 26
fewer 27
less than 27
one less than 28
first through fifth 30
picture graph 31
row 31
column 33

BACKGROUND

1. A number is an idea. Number is a property of groups. When we use a written symbol to represent a number, we call it a numeral. A numeral is a name for a number. The child is not expected to distinguish between number and numeral at this time. The whole numbers are 0, 1, 2, 3, The counting numbers are 1, 2, 3,

2. When comparing the members of two groups, we use the words "more" and "fewer." We use the words "greater" and "less" when comparing numbers.

The distinction in language should not be stressed at this time to the extent that the child becomes primarily concerned with language and fails to understand the important mathematical concepts. It is best to use terminology that makes the flow of words easier and does not obscure the mathematical ideas.

3. When a number is used to tell the number of a group and answer the question, "How many?", it is used in the cardinal sense. For example, four is used in the cardinal sense in this statement: "There are four crayons in the box."

When a number tells "Which one?", it is used in the ordinal sense. For example, "The child is sitting in the fourth seat."

4. A graph consists of two sets of data, such as animal trainers and the kinds of animals trained. The graph is a way to organize the data so that comparisons can be made easily. Only picture graphs are introduced in this chapter. At this stage each picture in a picture graph represents exactly one member of a group.

MATERIALS

word and numeral cards for 0-9

24 blocks

45 counters

masking tape

9 chairs

word cards for first through fifth picture

(See the Initial Activity on page 18.)

vertical and horizontal picture graphs

CAREER AWARENESS

Floral Designers [34]

These designers take single flowers and arrange them for gifts and decorations. Floral designers get their instructions from the customer. This way they know the color, type of flower, and price range, as well as the date, time, and place that the flowers should be delivered. Floral designers should be able to work well with their hands, have good color vision, and an artistic sense of balance in lines, shapes, and colors.

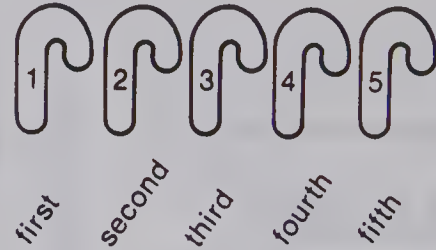
It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that floral designers must arrange flowers properly and pleasing to the eye. Customers must be attracted to the various arrangements before they will decide to buy them.

Art description: The people holding the vase, planter, and basket are floral designers. The flowers: daisies, tulips and roses are reflected within the graph.

BULLETIN BOARD

1. Place the numeral cards in order for 0 through 9 across the top of the bulletin board. Encourage each child to choose a number, more than zero, and draw a set picture for that number. Somewhere on the picture the child should write the numeral for the number of objects in the group. Assist the child in displaying the picture below the correct numeral on the bulletin board. This bulletin board may be used to review the order of numbers and comparing numbers.

2. Create the following bulletin board when discussing the numerals 1 through 5 and ordinal numbers.



Make each candy cane a different color or a different design. For example, the first could have red stripes, the second could be yellow, the third orange, and so on. Then you can discuss this display by asking questions such as: "What color is the third candy cane? What is the numeral on the red striped candy cane?" etc.

3. A horizontal or vertical picture graph similar to those on pages 31-34 showing the boys and girls in the class might make an enjoyable and attractive bulletin board. You should prepare the grid and then distribute pieces of drawing paper, cut to the size of one square of the grid, to each child. Have them each draw a self-portrait on the piece of paper and then assist them in completing the graph.

Discuss the information shown on this graph, such as the total number of children in the class, the number of boys, the number of girls, and then compare the number of boys and girls. You might use this graph each morning while taking attendance to record which boys and girls are present or absent.

4. The art theme of this chapter is "The Circus." Children may enjoy creating a bulletin board using this theme.

OBJECTIVES

To associate 0 and 1 with groups
To read zero, 0 and one, 1

PACING

- Level A All (1-4 guided)
- Level B All (1-3 guided)
- Level C All (1-3 guided)

VOCABULARY

numeral, zero, one

MATERIALS

numeral and word cards for 0 and 1

BACKGROUND

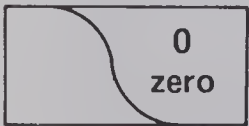
See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display the word and numeral cards for zero and stress that each is read "zero." Show an empty crayon box and explain that zero describes a set with no members. Introduce one and 1 in a similar way.

ACTIVITIES

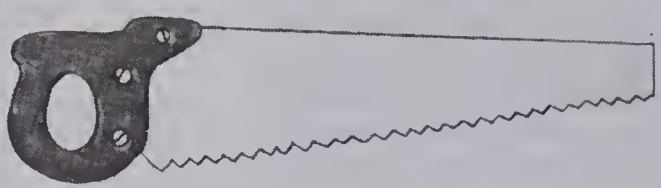
1. Provide these Jigsaw Set Cards. (See Activity Reservoir.)



1. Zero and One

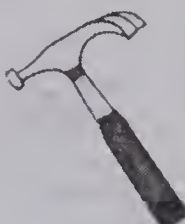
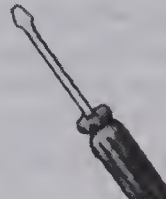
0 zero

2.

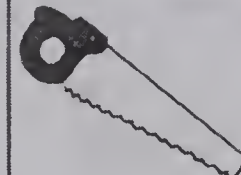



1 one

3.

			
0	1	0	1

4.

	
0	1

Concepts of zero and one; recognizing 0 and 1 (eleven) 11

Mix the parts and have the child fit them together again. Keep these pieces for later use.

2. Provide a booklet for each child (5 sheets of paper, folded like a book and stapled). Write 0 ZERO at the top of the first page and 1 ONE at the top of the next. The child can paste a picture of 1 object or draw 1 ball on this page. The child will be making a Number Book.

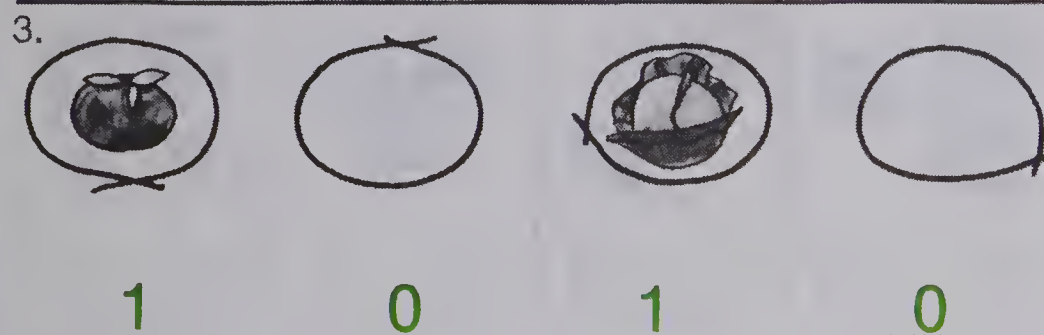
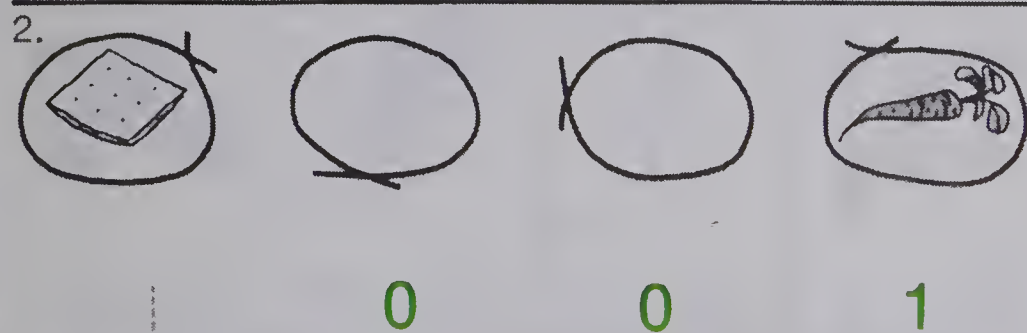
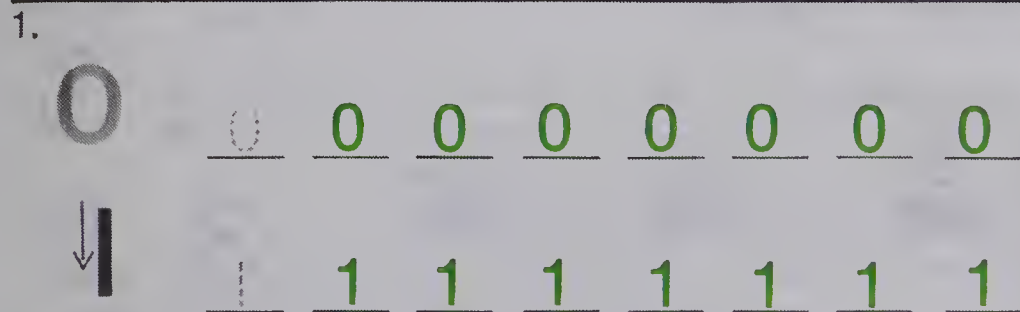
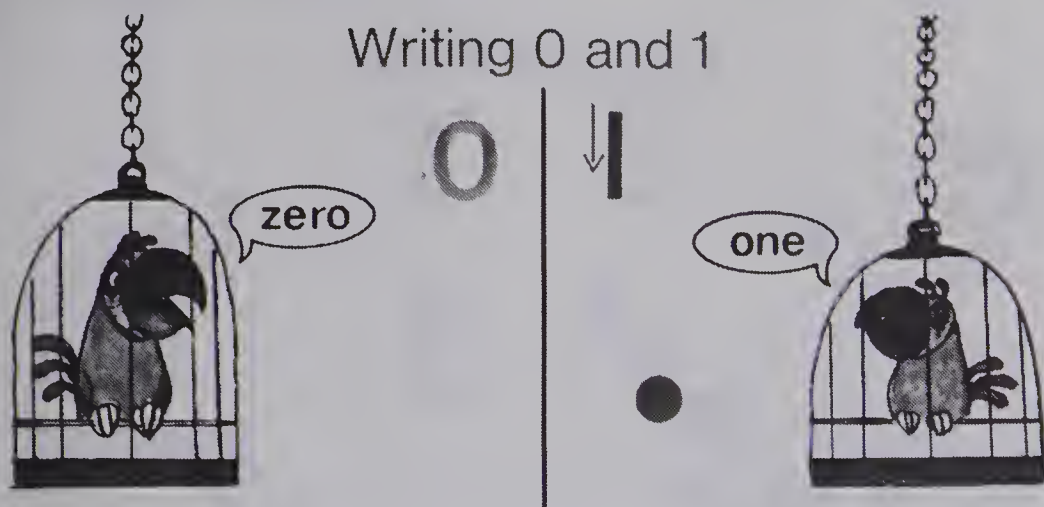
3. Provide one each of group, numeral and word cards for zero and one. Have the child mix them up and practice matching the numeral and word cards with the correct group cards.

Using the Book Panel 1: Associate the word name zero and 0 with the group having no members.

Panel 2: Associate the word name one and 1 with a set having one member, the saw. Point out the idea that 1 is one more than 0.

Panels 3-4: Direct attention to the first picture. Ask, "How many members are in this group? (1)" Have the child trace the ring around the 1. For each picture have the child ring the numeral that tells the number of members in the set.

Writing 0 and 1



12 (twelve) Writing the numerals 0 and 1

OBJECTIVE

To write 0 and 1

PACING

Level A All (guided)
Level B All (top, 1-2 guided)
Level C All (top, 1-2 guided)

MATERIALS

word and numeral cards for 0, 1

SUGGESTIONS

Initial Activities 1. Display a set with no members and a set with one member. Review 0 and 1 using the word and numeral cards.

2. Demonstrate how to write 0 and 1. If possible, use the overhead projector with numerals to trace over.

ACTIVITIES

1. Provide a worksheet for the child to practice tracing and writing 0 and 1.

2. Have the child practice writing 0 and 1 several times at the bottom of these pages in the Number Book described on page 11.

3. Give the child two small file cards. The child is to write 0 at the top of the cards and 1 at the top of the other. Tell the child to draw 1 blue dot on this card. Collect the cards for later use in a card game.

Using the Book Top of page: Have the child look at the pictures at the top of the page. Then review the word names and 0 and 1. Associate each number with the appropriate set of dots. You may wish to point out the one more relationship shown by the sets.

Panel 1: Introduce writing 0 and 1. Demonstrate the proper way to write each numeral, and then have the child practice writing them.

Panel 2-3: For each set in these panels, the child describes the set, tells the number of members in it, and then writes the appropriate numeral. Emphasize that 1 for example, tells how many are in each set with one member, although there may be different things in each set.

OBJECTIVES

To associate 2 and 3 with groups
To read two, 2 and three, 3

PACING

Level A All (1-4 guided)
Level B All (1-3 guided)
Level C All (1-3 guided)

VOCABULARY

two, three

MATERIALS

6 blocks, word and numeral cards for 2 and 3

SUGGESTIONS

Initial Activity Display a set of one block, a set of two blocks and a set of three blocks. Introduce the word names two and three and 2 and 3 using the word and numeral cards. Develop the ideas that 2 is one more than 1, and 3 is one more than 2.

ACTIVITIES

1. You may provide Jigsaw Set Cards, similar to those on page 11, for 2 and 3. (Use different cutting patterns.)

2. Write 2, two and 3, three at the top of the appropriate pages in the Number Book described on page 11. The child can paste pictures of 2 things and 3 things on these pages or draw 2 balls and 3 balls.

3. Provide one each of group numeral, and word cards for two and three. Have the child mix them and practice matching the numeral and word cards with the correct group cards. The cards for 0 and 1 can be mixed with these to practice matching them all again.

Two and Three

1.



1 one

2.



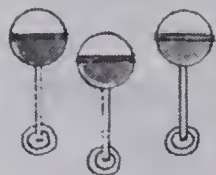
2 two

3.



3 three

4.



(3) 2



2 (1)

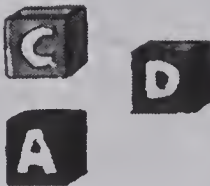


(2) 3



(1) 2

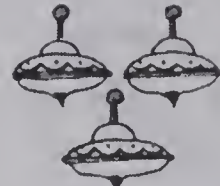
5.



2 (3)



1 (2)



(3) 2

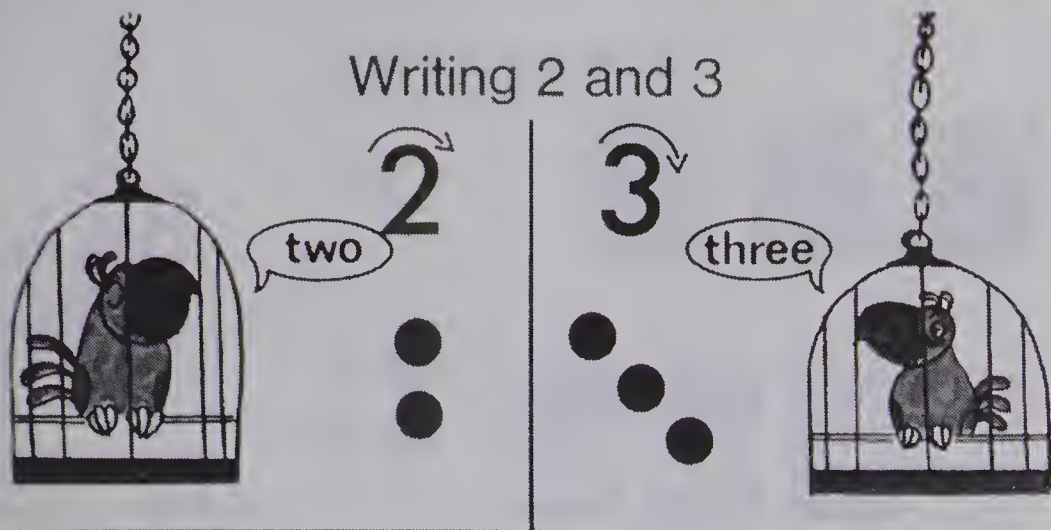


(2) 1

Concepts of two and three; recognizing 2 and 3 (thirteen) 13

Using the Book Panels 1-3: Associate the word name one and 1 with a group having 1 member. Next associate the word name two and 2 with a group having 2 members. Then associate the word name three and 3 with a group having three members. Bring out the ideas that 2 is one more than 1, and 3 is one more than 2.

Panels 4-5: Direct attention to the first picture. Ask, "How many members are in this group? (3)." Have the child trace the ring around the 3. For each picture, have the child ring the numeral that tells the number of members in the group.



OBJECTIVE

To write 2 and 3

PACING

Level A All (guided)
Level B All (top, 1-2 guided)
Level C All (top, 1-2 guided)

MATERIALS

Word and numeral cards for 2,3

SUGGESTIONS

Initial Activities 1. Display a group with two members and a group with three members. Review 2 and 3 using the word and numeral cards.

2. Demonstrate how to write 2 and 3. If possible, use the overhead projector with numerals to trace over.

ACTIVITIES





1. Provide a worksheet for the child to practice tracing and writing 2 and 3.

2. Have the child practice writing 2 and 3 several times at the bottom of these pages in the Number Book described on page 11.





3. Give the child two small file cards. Tell the child to write 2 at the top of one of the cards and draw 2 red dots. Then the child is to write 3 on the other card and draw 3 blue dots. Collect the cards for later use in a card game.

1. **2** 2 2 2 2 2 2 2 2

3 3 3 3 3 3 3 3 3

2.    

 2 0 3

3.    

2 3 2 3

Using the Book Top of page: Have the child look at the pictures at the top of the page. Then review the word names and 2 and 3. Associate each number with the appropriate set of dots. You may wish to point out the one more relationship shown by the groups. 3 is one more than 2.

Panel 1: Introduce writing 2 and 3. Demonstrate the proper way to write each numeral, and then have the child practice writing them.

Panels 2-3: For each group in these panels, have the child describe the group, tell the number of members in it, and then write the appropriate numeral. Emphasize that 2 and 3 tell how many are in each group with two and three members although there may be different things in each group.

OBJECTIVES

To associate 4 and 5 with groups
To read four, 4 and five, 5

PACING

- Level A All (1-4 guided)
- Level B All (1-3 guided)
- Level C All (1-3 guided)

VOCABULARY

four, five

MATERIALS

12 blocks, word and numeral cards for 4, 5

SUGGESTIONS

Initial Activity Display a set of three blocks, a set of four blocks, and a set of five blocks. Introduce the word names four and five and 4 and 5 using the word and numeral cards. Develop the ideas that 4 is one more than 3, and 5 is one more than 4.

ACTIVITIES


1. Provide Jigsaw Set Cards, similar to those on page 11, for 4 and 5. (Use different cutting patterns.)
2. Write 4, four and 5, five at the top of the appropriate pages in the Number Book. The child can paste pictures on each or draw 4 balls and 5 balls.
3. Provide one each of set, numeral, and word cards for 4 and 5. Have the child mix them and practice matching the numeral and word cards with the correct set card. The cards for 0, 1, 2, and 3 can be mixed with these to practice matching them all again.

1. Four and Five




3 three

2.

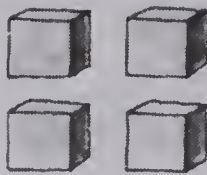
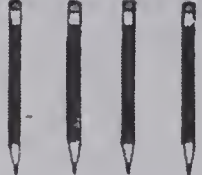
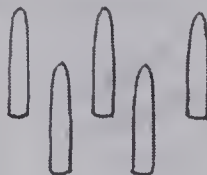

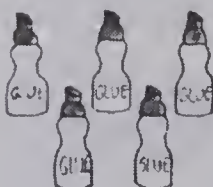
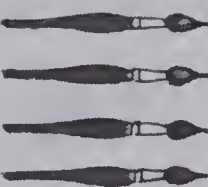

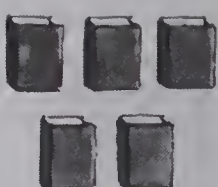


4 four

3.



5 five

<p>4.</p>  <p>4 5</p>	 <p>3 4</p>	 <p>5 4</p>	 <p>2 4</p>
 <p>5 4</p>	 <p>4 3</p>	 <p>4 5</p>	 <p>2 5</p>

Concepts of four and five; recognizing 4 and 5 (fifteen) 15

Using the Book Panels 1-3: Associate the word name three and 3 with a group having three members. Next, associate the word name four and 4 with a group having four members. Then associate the word name five and 5 with a group having five members. Elicit the ideas that 4 is one more than 3, and 5 is one more than 4.

Panels 4-5: Direct attention to the first picture. Ask, "How many members are in this group? (4)" Have the child trace the ring around the 4. For each picture have the child ring the numeral that tells the number of members in the group.

Writing 4 and 5

↓ 4 ↓

↓ 5 →

four



five



OBJECTIVE

To write 4 and 5

PACING

Level A All (guided)

Level B All (top, 1-2 guided)

Level C All (top, 1-2 guided)

MATERIALS

word and numeral cards for 4, 5

SUGGESTIONS

Initial Activities 1. Display a group with four members and a group with five members. Review 4 and 5 using the word and numeral cards.

2. Demonstrate how to write 4 and 5. If possible, use the overhead projector with numerals to trace over.

ACTIVITIES

1. Provide a worksheet for the child to practice tracing and writing 4 and 5.

2. Have the child practice writing 4 and 5 several times at the bottom of these pages in the Number Book described on page 11.

3. Give the child two small file cards. Tell the child to write 4 at the top of one of the cards and draw 4 red dots. Then the child is to write 5 on the other card and draw 5 blue dots. Collect these cards for later use.

1.

↓ 4 ↓

4

4

4

4

4

4

4

↓ 5 →

5

5

5

5

5

5

5

2.



3

2

4

1

3.



5

4

5

0

Using the Book Top of page: Have the child look at the pictures at the top of the page. Then review the word names and 4 and 5. Associate each number with the appropriate group of dots. You may wish to point out the one more relationship shown by the group: 5 is one more than 4.

Panel 1: Introduce writing 4 and 5. Demonstrate the proper way to write each numeral, and then have the child practice them.

Panels 2-3: For each group in the panels, have the child describe the group. Tell the number of members in it, and then write the appropriate numeral. Emphasize that 4 and 5 tell how many are in each group with four and five members although there may be different things in each group.

OBJECTIVE

To count through 5

PACING

- Level A All (1 guided)
- Level B All (1 guided)
- Level C All (1 guided)

VOCABULARY

count

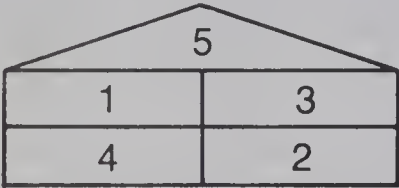
SUGGESTIONS

Initial Activity Have five children stand without indicating the number. Assist a child in pointing to each, counting "1, 2, 3, 4, 5." Stress that the last counting number named was "5" so there are 5 children in all.

Discuss the consumer aspects of this page. Ask the meaning of sale, bargain, and better buy. Children might tell about trips to the supermarket.

ACTIVITIES

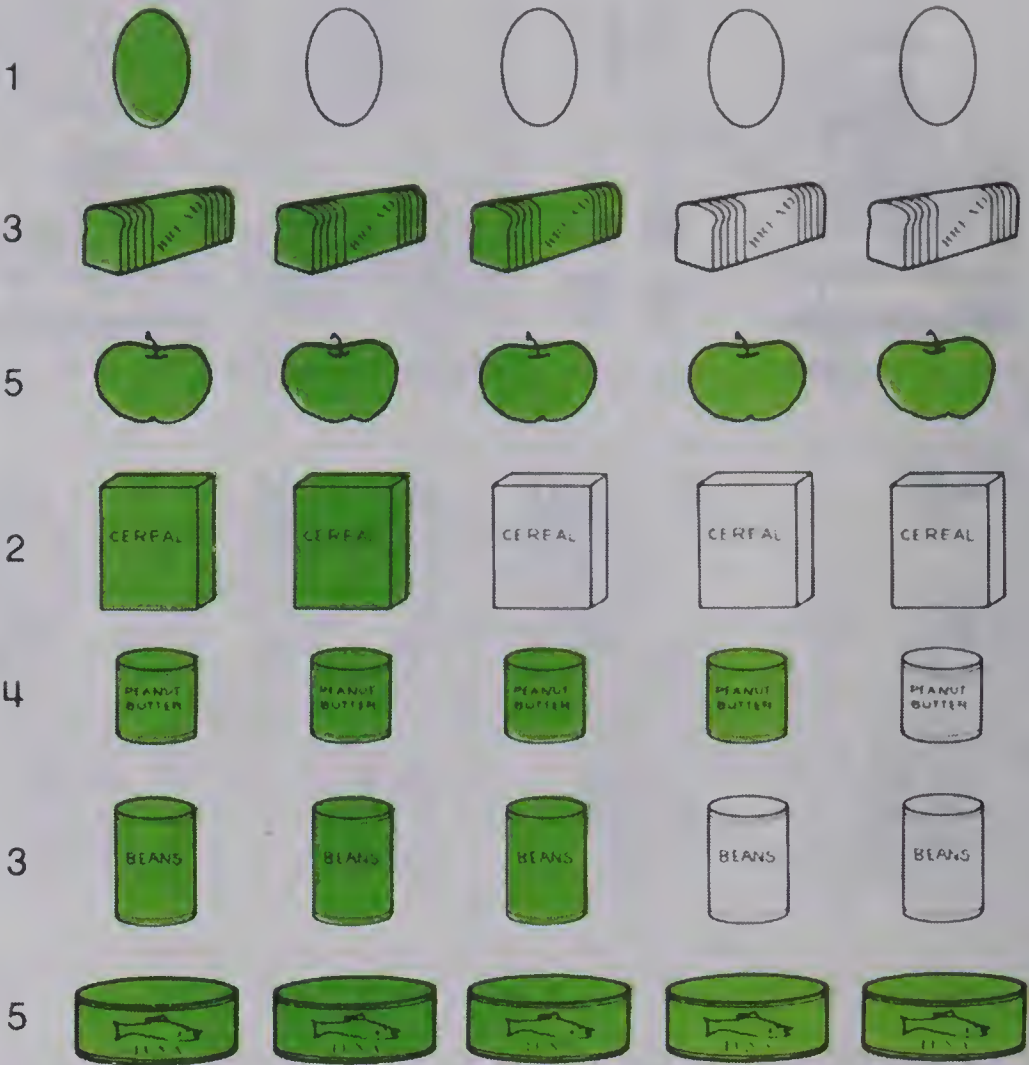
1. Give the child several groups of five objects each. Have the child count the members and tell how many.
2. Draw the picture below.



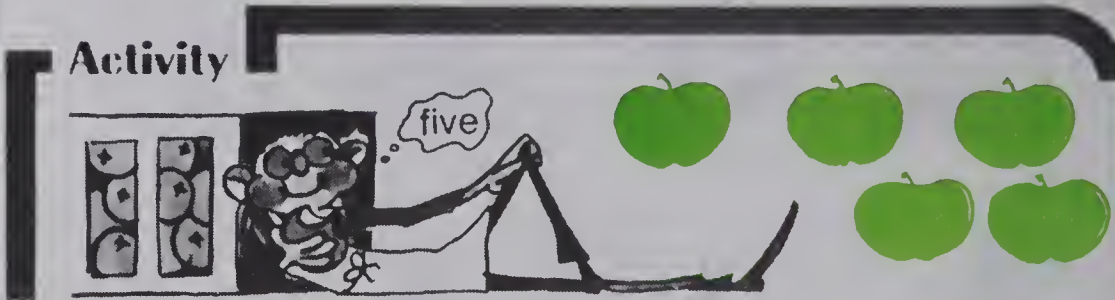
A child is the mail carrier. The numeral in each apartment (box) tells how many letters to deliver. The child places the appropriate number of counters in each box.

3. You may mix the word and numeral cards for 0-5. Have the child match each word and numeral.

Counting



Activity



AT HOME Have the child count 5 vegetables, 5 spoons, and so on

Counting through 5 • Activity: Drawing a picture for a given number (seventeen) 17

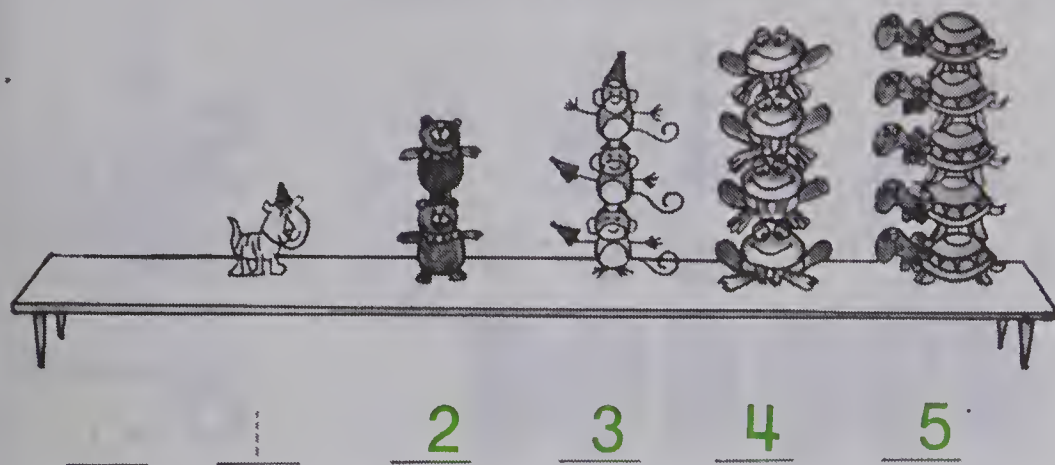
Using the Book First Row: Have the child read the 1. Then have the child count one egg. Tell the child to color one egg.

For each row, have the child read the numeral, then count out that many objects, and then color the correct number.

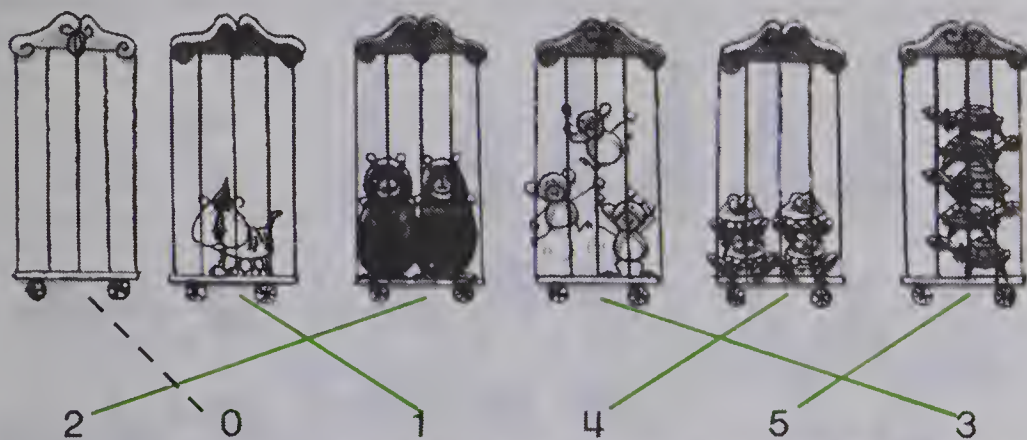
Activity: Tell the child to read the word five and then draw 5 apples.

Order of Numbers

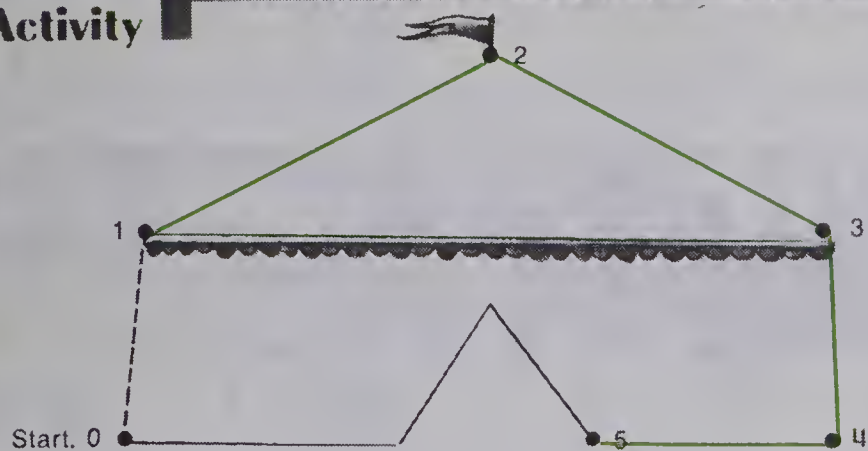
1.



2.



Activity



18 (Eighteen) Ordering 0 through 5 • Activity

Using the Book Panel 1: Say, "There are groups of animals on the table." Ask the child to count the animals in each group and write the numeral below each group to show how many. Point out that each group contains one more member than the one before it.

Panel 2: Call attention to the groups of cages. Point to the first cage, ask, "How many animals are in this cage? (0)" Have the child trace over the line from the cage to the numeral 0. Tell the child to match the number of animals in each cage with the numeral that tells how many.

Activity: Introduce the word "Start." Explain that by connecting the dots in order from 0 through 5 a picture will appear. Challenge the child to guess what the picture will show before connecting the dots. After the dots are connected correctly, the child should enjoy coloring the picture.

OBJECTIVE

To show the order of numbers 0 through 5

PACING

Level A All (1-2 guided)
Level B All (1 guided)
Level C All (1 guided)

VOCABULARY

order

MATERIALS

See Initial Activity.

SUGGESTIONS

Initial Activity Create a display, similar to the one in panel 1, illustrating the order of numbers from 0-5. The child may count the objects and write the numeral below each group. Lead the child to discover that each group contains one more member.

ACTIVITIES

1. Mix the jigsaw puzzle parts for 0-5. Ask the child to put the puzzle parts together and then put the puzzles in order from left to right (0-5).

2. You may mix the word and numeral cards (0-5). Have the child match each word and numeral and then put the pairs in order (0-5).

3. Play Bingo as described in the Activity Reservoir. Each square should have dots representing a number (1-5) or be empty to represent zero. You may use a numeral twice. Give the child 2 sets of numeral cards to cover the proper squares.

OBJECTIVES

To associate 6 and 7 with groups
To read six, 6 and seven, 7

PACING

Level A All (1-4 guided)
Level B All (1-3 guided)
Level C All (1-3 guided)

VOCABULARY

six, seven

MATERIALS

18 blocks, word and numeral cards for 6, 7

SUGGESTIONS

Initial Activity Display a group of five blocks, a group of six blocks, and a group of seven blocks. Introduce the word names six and seven and 6 and 7 using the word and numeral cards. Develop the ideas that 6 is one more than 5, and 7 is one more than 6.

ACTIVITIES

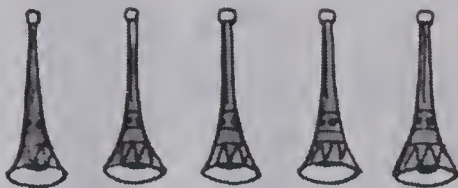
1. You may provide Jigsaw Set Cards, similar to those on page 11, for 6 and 7. (Use different cutting patterns.)

2. Write 6, six and 7, seven at the top of the appropriate pages in the Number Book. The child can paste pictures on each or draw 6 balls and 7 balls.

3. Provide one each of group, numeral, and word cards for 6 and 7. Have the child mix them and practice matching the numeral and word cards with the correct group cards. The cards for 0-5 may then be mixed in.

1.

Six and Seven



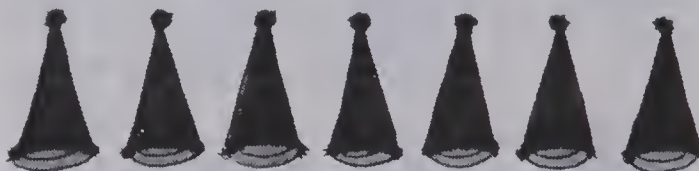
5 five

2.



6 six

3.



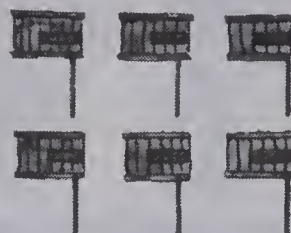
7 seven

4.



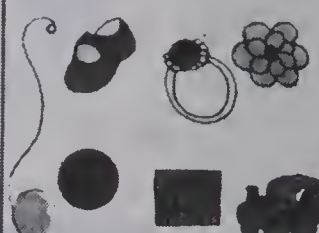
6

(5)



7

(6)



6

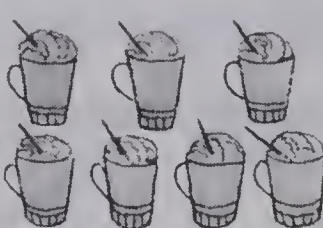
(7)

5.



5

(6)



6

(7)



7

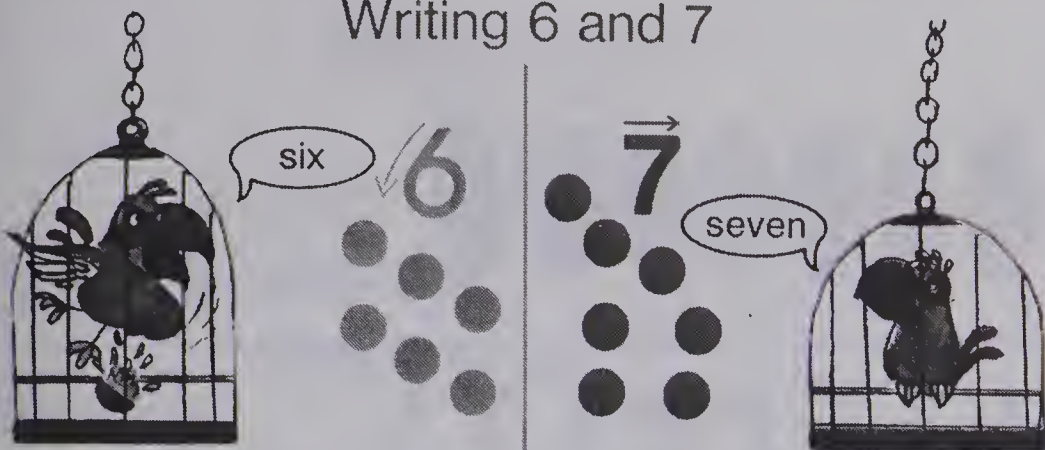
(6)

Concepts of six and seven, recognizing 6 and 7 (nineteen) 19

Using the Book Panels 1-3: Associate the word five and 5 with a group having five members. Next associate the word six and 6 with a group having six members. Then associate the word seven and 7 with a group having seven members. Elicit the ideas that 6 is one more than 5, and 7 is one more than 6.

Panels 4-5: Direct attention to the first picture. Ask, "How many members are in this group? (5)" Have the child trace the ring around the 5. For each picture have the child ring the numeral that tells the number of members in the group.

Writing 6 and 7



OBJECTIVE

To write 6 and 7

PACING

Level A (top, 1-2 guided)

Level B (top, 1 guided)

Level C (top, 1 guided)

MATERIALS

word and numeral cards for 6, 7

SUGGESTIONS

Initial Activities 1. Display a group with six members and a group with seven members. Review 6 and 7 using the word and numeral cards.

2. Demonstrate how to write 6 and 7. If possible, use the overhead projector with numerals to trace over.

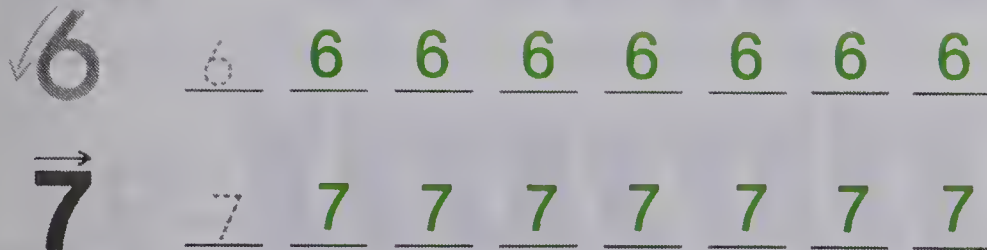
ACTIVITIES

1. Provide a worksheet for the child to practice tracing and writing 6 and 7.

2. Have the child practice writing 6 and 7 several times at the bottom of these pages in the Number Book described on page 11.

3. Give the child two small file cards. Tell the child to write 6 at the top of one of the cards and draw 6 red dots. Then the child is to write 7 on the other card and draw 7 blue dots. Collect these cards for later use.

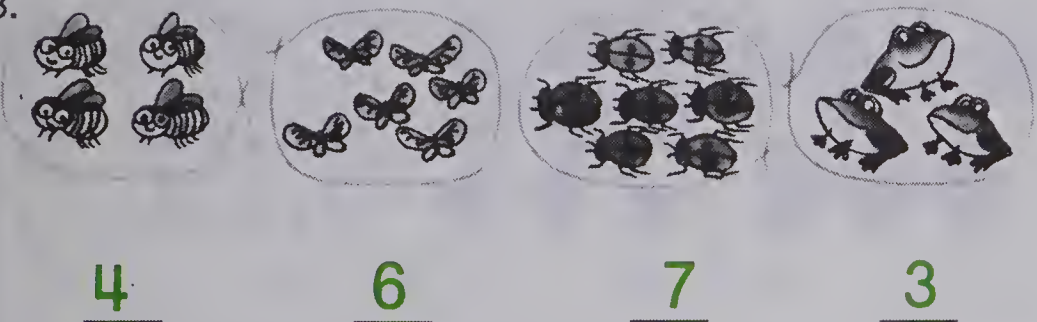
1.



2.



3.



20 (twenty) Writing the numerals 6 and 7

Using the Book Top of page: Have the child look at the pictures at the top of the page. Then review the word names and 6 and 7. Associate each number with the appropriate group of dots. You may wish to point out the one more relationship shown by the groups: 7 is one more than 6.

Panel 1: Introduce writing 6 and 7. Demonstrate the proper way to write each numeral and then have the child practice writing them.

Panels 2-3: For each group in these panels, have the child describe the group, tell the number of members in it, and then write the appropriate numeral. Emphasize that 6 and 7 tell how many are in each group with six and seven members although there may be different things in each group.

OBJECTIVES

To associate 8 and 9 with groups
To read eight, 8 and nine, 9

PACING

Level A (1-4 guided)
Level B (1-3 guided)
Level C (1-3 guided)

VOCABULARY

eight, nine

MATERIALS

24 blocks, word and numeral cards for 8, 9

SUGGESTIONS

Initial Activity Display a group of seven blocks, a group of eight blocks, and a group of nine blocks. Introduce the word names eight and nine and 8 and 9 using the word and numeral cards. Develop the ideas that 8 is one more than 7, and 9 is one more than 8.

ACTIVITIES

1. Provide Jigsaw Set Cards, similar to those on page 11, for 8 and 9. (Use different cutting patterns.)

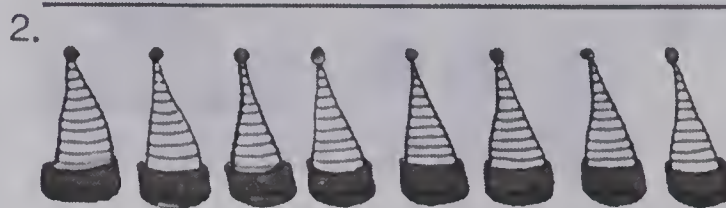
2. Write 8, eight and 9, nine at the top of the appropriate pages in the Number Book. The child can paste pictures on each or draw 8 balls and 9 balls.

3. Provide one each of group, numeral, and word cards for 8 and 9. Have the child mix them and practice matching the numeral and word cards with the correct group cards. The cards for 0-7 may then be mixed in.

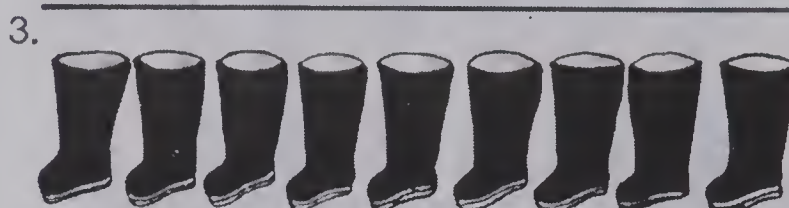
Eight and Nine



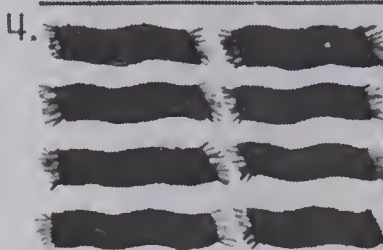
7 seven



8 eight

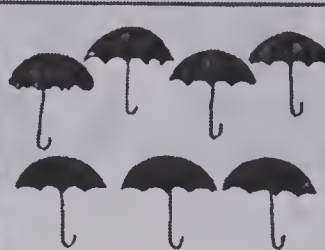


9 nine



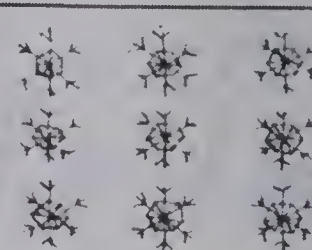
8

7



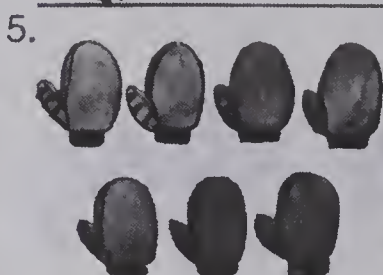
7

9



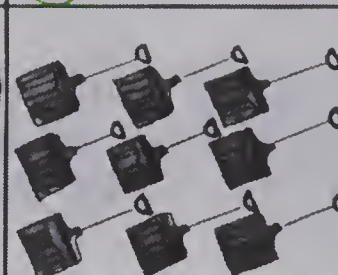
8

9



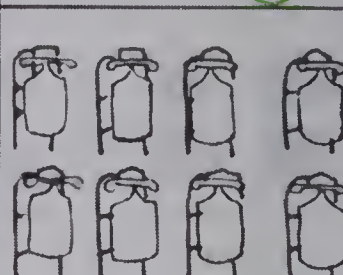
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8



6

9



9

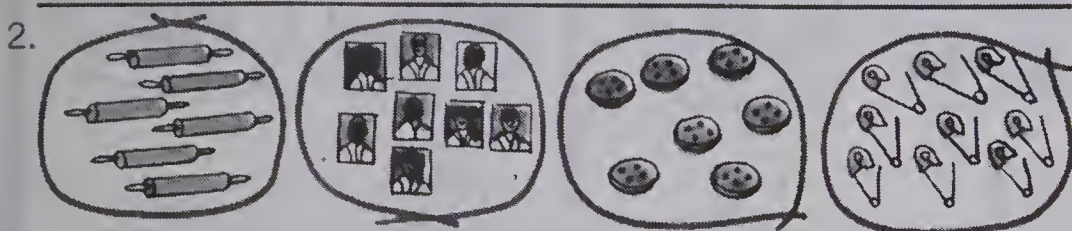
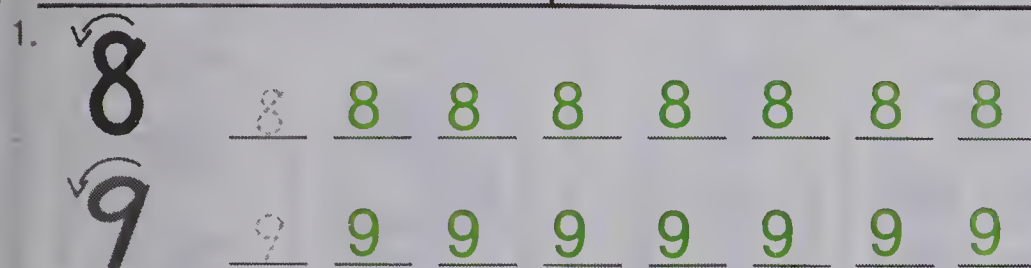
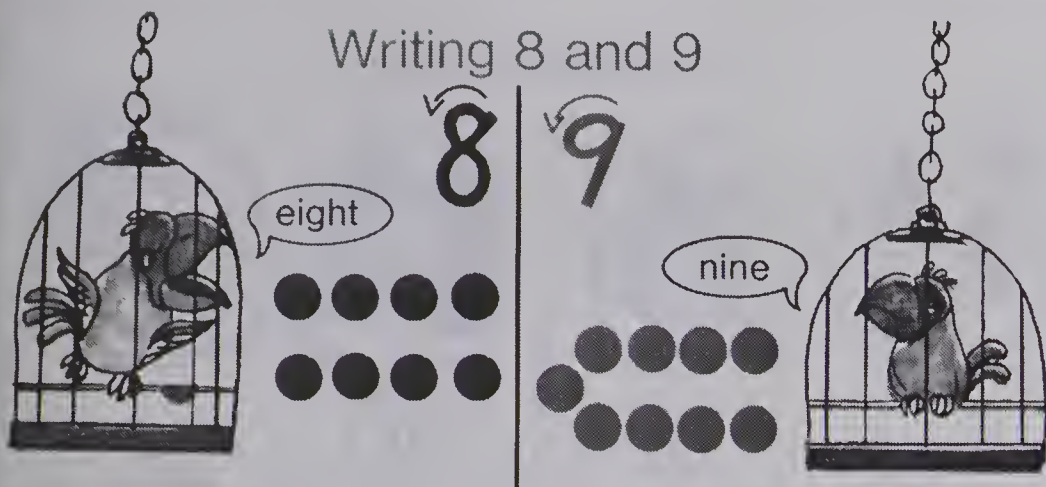
8

Concepts of eight and nine; recognizing 8 and 9 (twenty-one) 21

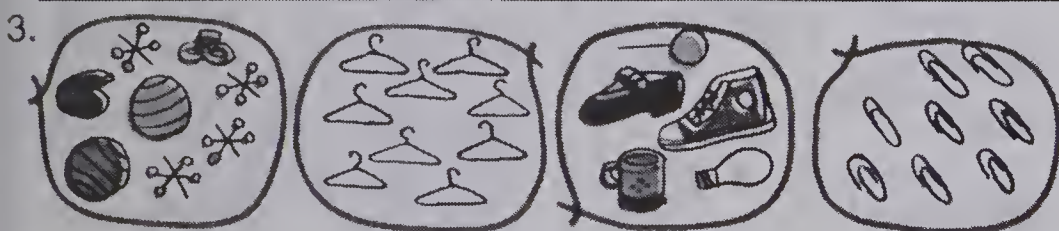
Using the Book Panels 1-3: Associate the word seven and 7 with a group having seven members. Next, associate the word eight and 8 with a group having eight members. Then associate the word nine and 9 with a group having nine members. Elicit the ideas that 8 is one more than 7, and 9 is one more than 8.

Panels 4-5: Direct attention to the first picture. Ask, "How many members are in this group? (8)" Have the child trace the ring around the 8. For each picture have the child ring the numeral that tells the number of members in the group.

Writing 8 and 9



6 8 7 9



8 9 5 8

22 (twenty-two) Writing the numerals 8 and 9

OBJECTIVE

To write 8 and 9

PACING

Level A All (top, 1-2 guided)
Level B All (top, 1 guided)
Level C All (top, 1 guided)

MATERIALS

word and numeral cards for 8, 9

SUGGESTIONS

Initial Activities 1. Display a group with eight members and a group with nine members. Review 8 and 9 using the word and numeral cards.

2. Demonstrate how to write 8 and 9. If possible, use the overhead projector with numerals to trace over.

ACTIVITIES

1. Provide a worksheet for the child to practice tracing and writing 8 and 9.

2. Have the child practice writing 8 and 9 several times at the bottom of these pages in the Number Book described on page 11.

3. Give the child two small file cards. Tell the child to write 8 at the top of one of the cards and draw 8 red dots. Then the child is to write 9 on the other card and draw 9 blue dots. Collect the cards for later use.

Using the Book Top of page: Have the child look at the pictures at the top of the page. Then review the word names 8 and 9. Associate each number with the appropriate group of dots. You may wish to point out the one more relationship shown by the sets: 9 is one more than 8.

Panel 1: Introduce writing 8 and 9. Demonstrate the proper way to write each numeral and then have the child practice writing them.

Panels 2-3: For each group in these panels, have the child describe the group, tell the number of members in it, and then write the appropriate numeral. Emphasize that 8 and 9 tell how many are in each group with eight and nine members although there may be different things in each group.

OBJECTIVE

To tell which of two numbers is greater

PACING

Level A All (1-3 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

greater than

MATERIALS

10 blocks, numeral cards for 0-9

BACKGROUND

See Item 2 of the Chapter Overview Background.

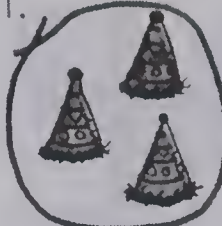
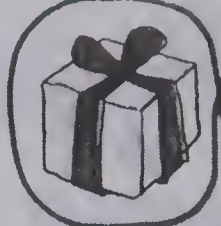

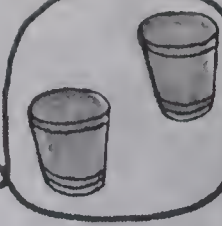
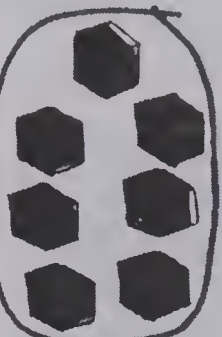
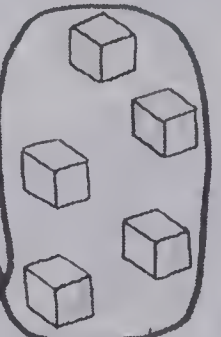
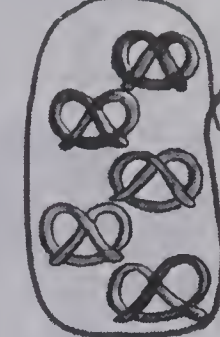

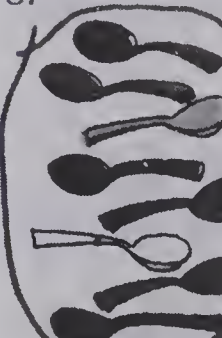

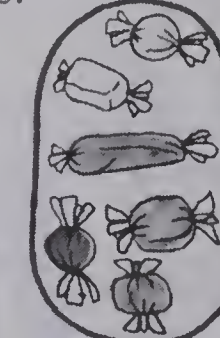

SUGGESTIONS

Initial Activity Display a group of 6 blocks and a group of 4 blocks. Have the child give the number of each group and show the numeral cards. Develop the idea that six members is more than four members, so 6 is greater than 4. Use other examples.

ACTIVITIES

1. You may use Bulletin Board suggestion 1 in the Chapter 2 Overview to practice the concept of greater than.
2. Play Battle, as described in the Activity Reservoir, for greater than. Use dot group cards to 9 (without numerals). The child counts how many and compares.
3. Play Battle, as described in the Activity Reservoir, for greater than. The child uses only numeral cards without set pictures.

Greater Than

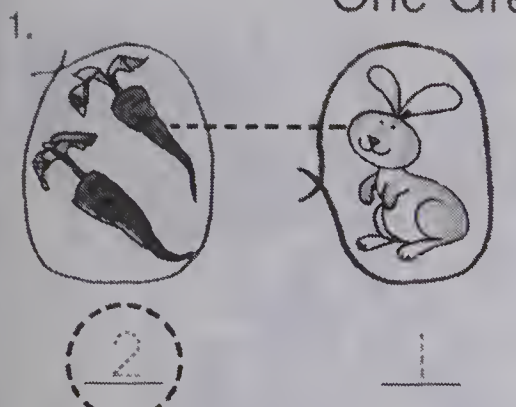
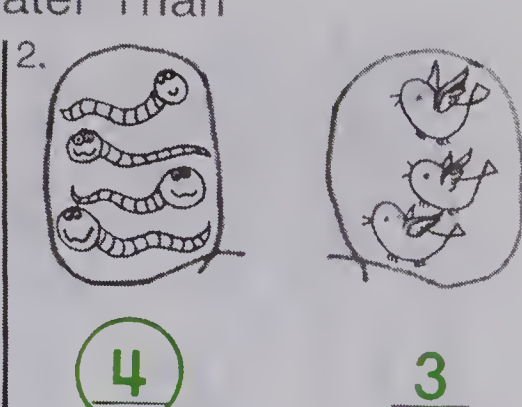
1.   <u> </u>	2.   <u>4</u> <u>2</u>
3.   <u>7</u> <u>5</u>	4.   <u>5</u> <u>2</u>
5.   <u>8</u> <u>5</u>	6.   <u>6</u> <u>9</u>

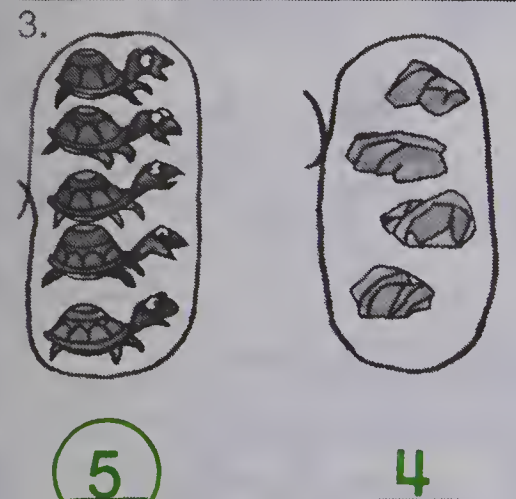
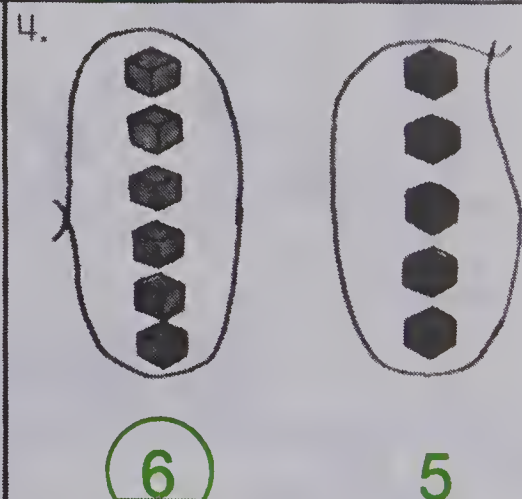
Comparing numbers less than 10; concept of greater than (twenty-three) 23

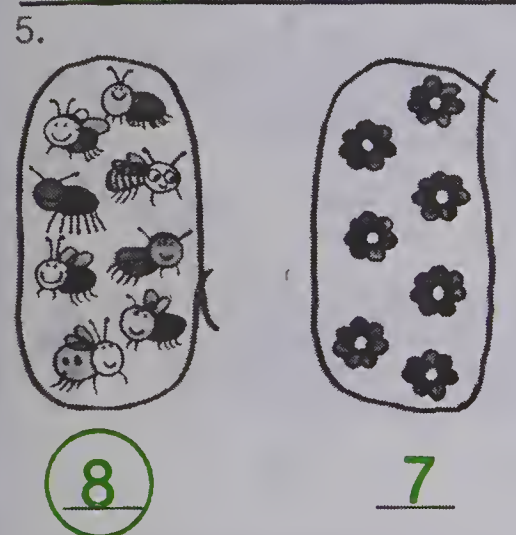
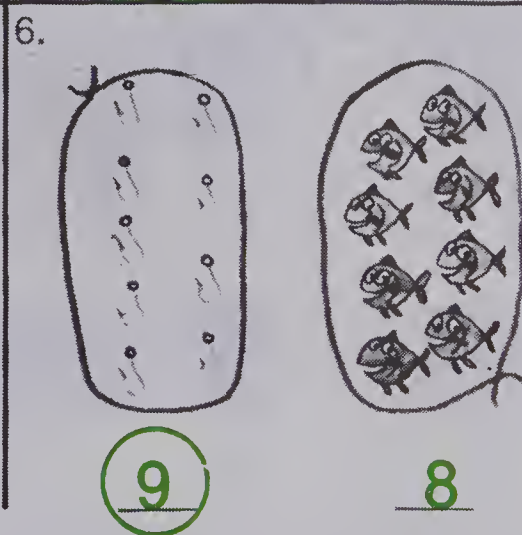
Using the Book Panel 1: Ask, "How many party hats? (3)" Have the child trace over the 3 in the blank. Then ask, "How many presents? (1)" Have the child trace over the 1 in the blank. You may wish to have the child match the box with one hat to verify which group has more members. Ask, "Which group has more members? (group of hats)" Tell the child that 3 groups is more members than 1 present so 3 is greater than 1. Have the child trace over the ring around the 3 to show that 3 is greater than 1.

Panels 2-6: Assist the child in describing each group and writing the numeral for the number of each group. Then have the child ring the numeral of the greater number.

One Greater Than

1.  2. 

3.  4. 

5.  6. 

24 (twenty-four) Concept of one greater than

Using the Book Panel 1: Ask, "How many carrots? (2)" Have the child trace over the 2 in the blank. Then ask, "How many rabbits? (1)" Have the child trace over the 1 in the blank. Have the child trace the line to match the groups and ask, "How many more carrots? (1)" Elicit the idea that 2 is one greater than 1, then have the child trace over the ring around the 2.

Panels 2-6: For each panel, have the child write the numeral for the number of each group and then ring the numeral that is one greater.

OBJECTIVE

To tell which of two numbers is one greater

PACING

Level A All (1-3 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

one greater than

MATERIALS

9 blocks, numeral cards for 0-9

SUGGESTIONS

Initial Activity Display a group of 4 blocks and a group of 3 blocks. Have the child give the number of each group and show the numeral cards. By matching, develop the idea that four members is one more than three members so 4 is one greater than 3. If necessary use other examples.

ACTIVITIES

1. Use Bulletin Board suggestion 1 in the Chapter 2 Overview to practice the concept of one greater.

2. Display the numerals 0-9. Ask, "What number is one greater than 0? What number is one greater than 3?" and so on.

3. Two or more children may play a game. Each child can have a shuffled stack of numeral cards (0-8) face down on the table. Each child, in turn, turns over a card. The first child to name the number that is one greater gets the card. At the end of the game, the child with more cards wins.

OBJECTIVE

To count through nine

PACING

Level A All (guided)
Level B All (1 guided)
Level C All (1 guided)

MATERIALS

9 blocks

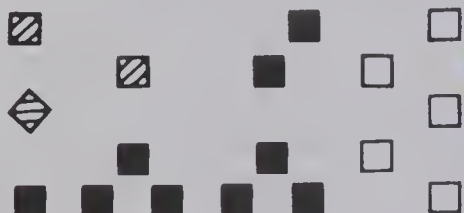
SUGGESTIONS

Initial Activity Put 9 blocks in a row on a table. Assist the child in touching each and counting 1 to 9. Stress that the last counting number named was "9", so there are 9 blocks in all.




ACTIVITIES

1. Give the child several groups of 9 or less objects, as books, pencils, or sheets of paper. The child counts the members of each group to tell how many.

2. Duplicate a worksheet showing sets of variously designed squares. Within each group all the squares should have the same design:



Below this picture write:

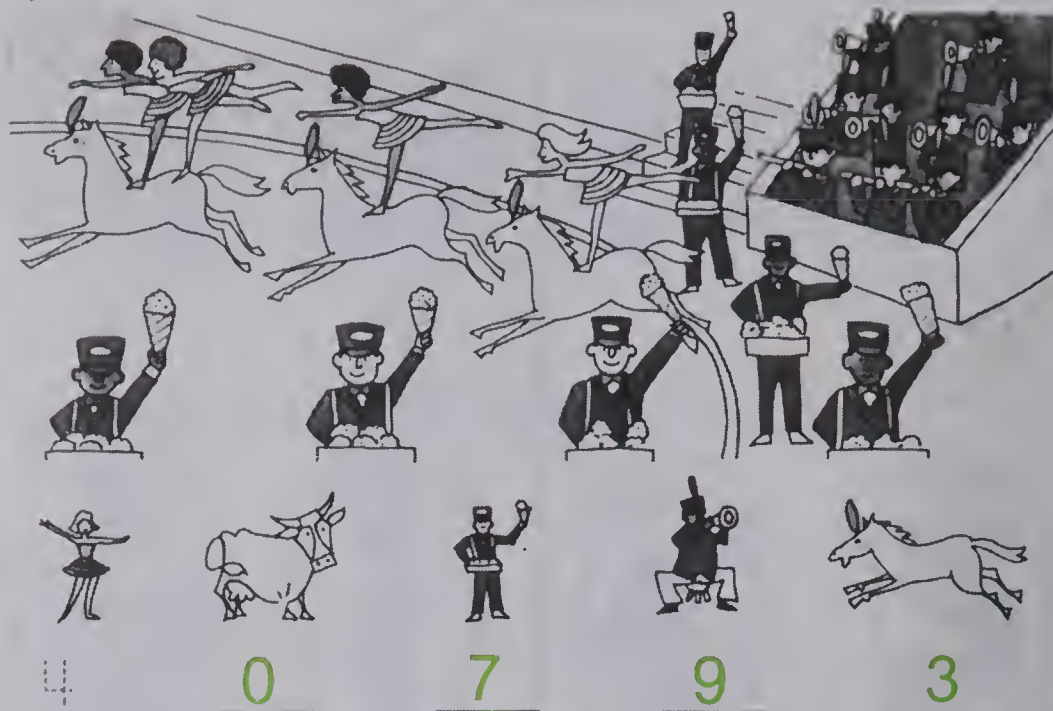
____  ____  ____ 

Have the child ring and count each group of squares and write the correct numerals in the blanks.

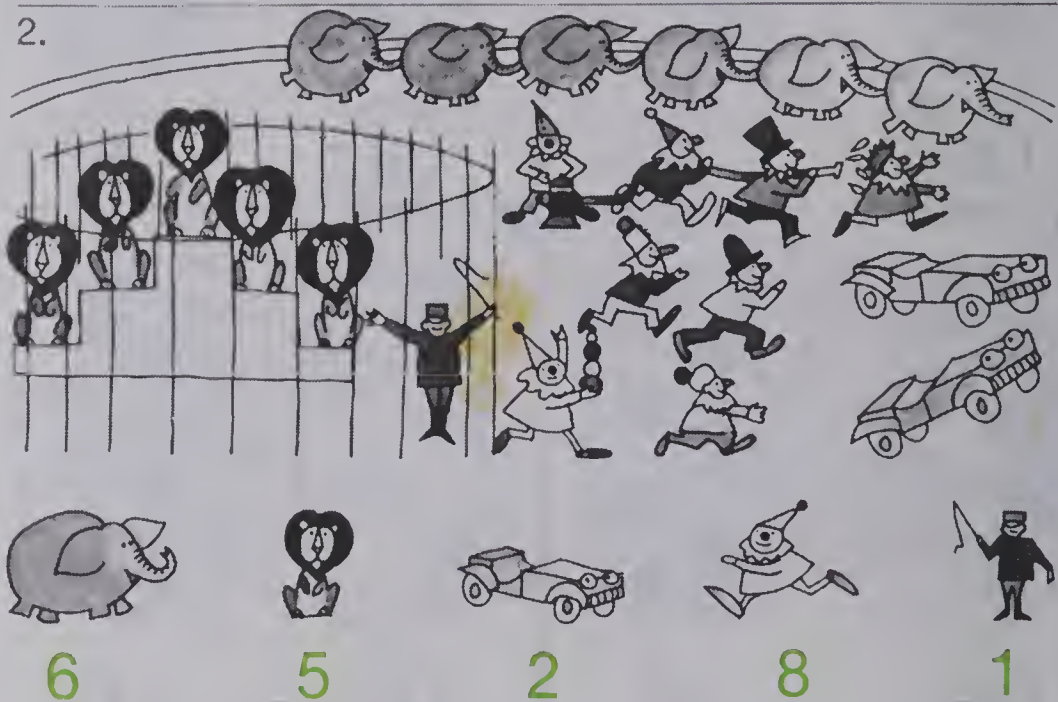
3. Mix word and numeral cards (0-9). Challenge the child to make pairs.

1.

Counting



2.



AT HOME Have the child count up to 9 objects in your home, such as toothpicks, spoons, and so on.

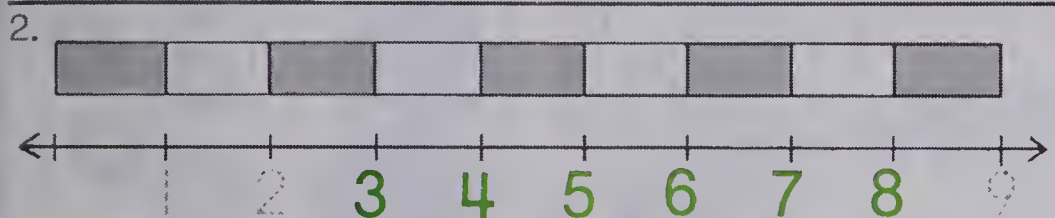
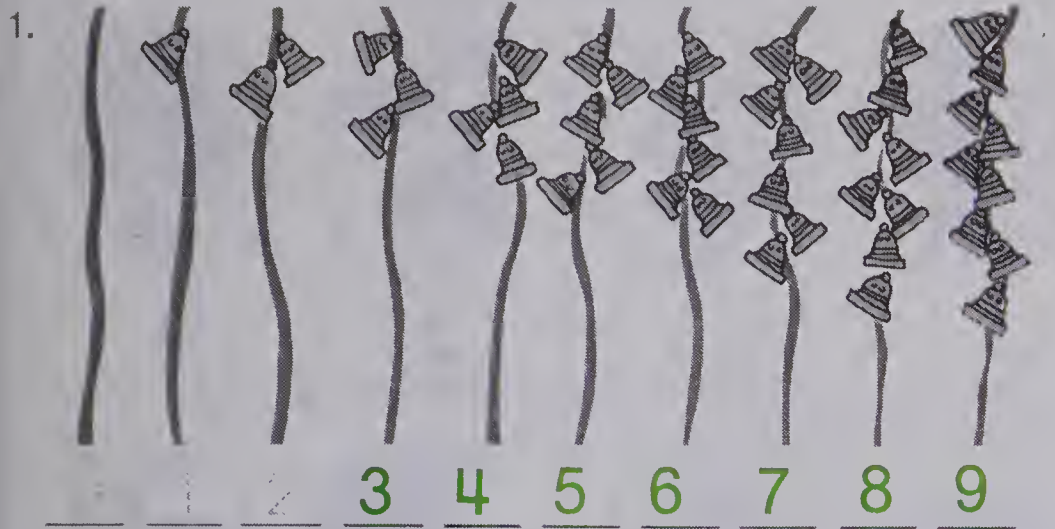
Counting through 9 (twenty-five) 25

Using the Book Panel 1: Ask the child to name different things in the picture of the circus such as horses, bareback riders, band members, and men selling things to eat. Direct attention to the picture of a bareback rider below. Ask, "How many bareback riders are in the circus picture above? (4)" Elicit that the 4 means there are 4 bareback riders in all in the picture above so 4 is written on this line. Have the child trace the 4. Then ask, "How many cows are in the circus picture?" Since there are no cows, have the child write 0 on this line. Have the child continue to count and then write the numeral to tell how many men are selling things to eat (7), how many band members (9), and how many horses (3).

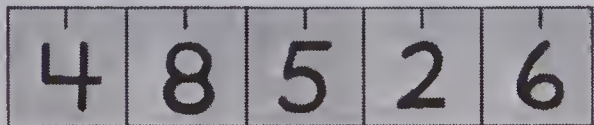
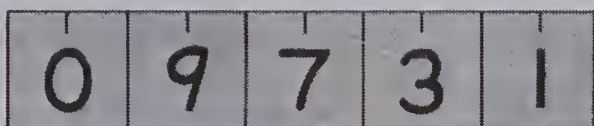
Panel 2: Direct the child to look at this circus picture. Have the child count and write how many of each thing below is shown in the picture. Remind the child to count only the things in the whole picture above and not the single ones below this picture.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

Order of Numbers



Activity



26 (twenty-six) Ordering 0 through 9 • Activity: Making a number line

Using the Book Panel 1: Tell the child that there are no bells on the first rope so trace the 0 shown below. Ask, "How many bells on the next rope? (1) Trace the 1." Have the child count the bells on each rope and write the correct numeral.

Panel 2: Explain that each colored strip will fit into each space on the number line below. Point out that the number line begins with zero and have the child trace over the 0. Ask the child to trace with a finger from 0 to 1 on the line and trace over the 1. Stress that this is one space on the line. The child can continue to write the numerals on the line to 9.

Activity: Using a ditto, provide each child with a number line. Make the first tick mark one inch from the paper edge. Make 10 tick marks in all, each one inch apart. Have the child cut out both strips of numbers and then cut each strip into squares. The child pastes each square, in order, under the appropriate tick mark on the number line you provide, as



OBJECTIVE

To show the order of numbers 0 through 9

PACING

Level A All (1-2 guided)
Level B All (1 guided)
Level C All (1 guided)

VOCABULARY

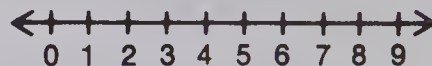
number line

MATERIALS

masking tape, 45 counters

SUGGESTIONS

Initial Activity Make a number line using masking tape:



Leave about 12 cm between numbers. Ask the child to touch a numeral such as 1. Then the child takes 1 counter and places it above the 1 on the number line. Say this is 1 space or unit (0-1). Repeat for 2 counters and relate this to 2 spaces or units (0-2) on the number line. Continue to 9 counters and 9 spaces.

ACTIVITIES

1. Mix the jigsaw puzzle parts together for 0-5. Ask the child to put the puzzle parts together and then put the puzzles in order (0-9).

2. Mix word and numeral cards 0-9 for the child to match.

3. Play Bingo as described on page 18. Include dot sets to 9.

OBJECTIVE

To tell which one of two numbers is less

PACING

Level A All (1-3 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

fewer, less than

MATERIALS

11 blocks, numeral cards for 0-9

BACKGROUND

See Item 2 of the Chapter Overview Background.



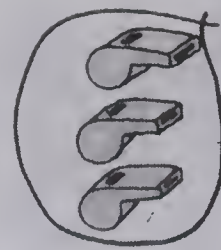
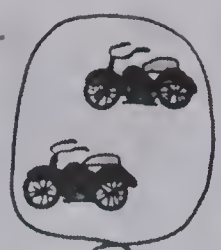



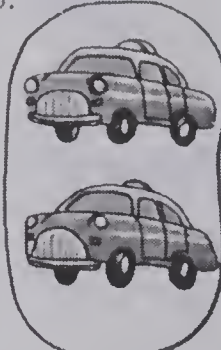

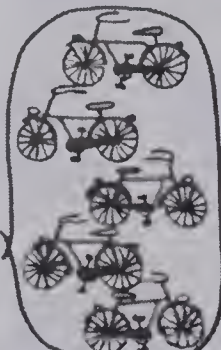

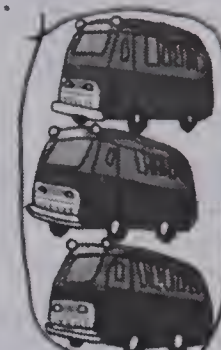

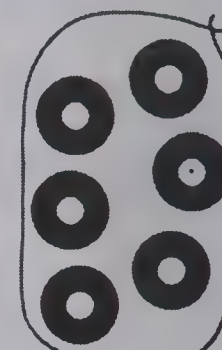



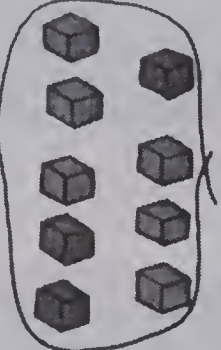

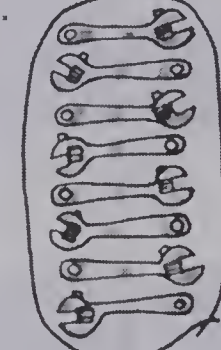

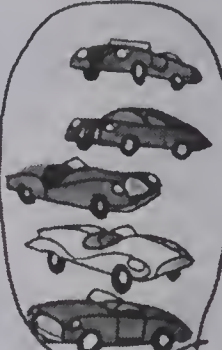

SUGGESTIONS

Initial Activity Display a group of 4 members and a group of 7 members. Have the child give the number of each group and show the numeral cards. Develop the idea that a group of four is fewer than a group of seven, so 4 is less than 7.

ACTIVITIES

1. You may use Bulletin Board suggestion 1 in the Chapter Overview to practice the concept of "less than" or "greater than."
2. Play Battle as described in the Activity Reservoir. Use only dot group cards. The child having the lesser number of dots gets both cards.
3. Battle may be played using only numeral cards without group pictures. The child with the lesser number gets both cards.

Less Than

1.  	 _____	2.  	 
3.  	 	4.  	 
5.  	 	6.  	 

Comparing numbers less than 10; concept of less than (twenty-seven) 27

Using the Book Panel 1: Ask, "How many police officers? (1)" Have the child trace the 1. Then ask, "How many whistles? (3)" Have the child trace the 3. You may wish to have the child match the police officer with a whistle to verify which set has fewer members. Finally ask, "Which group has fewer members? (police officer)" Tell the child that 1 police officer is fewer than 3 whistles, so 1 is less than 3. Have the child trace the ring around the 1 to show that 1 is less than 3.

Panels 2-6: Assist the child in describing each group and writing the numeral for the number of each group. Then have the child ring the numeral of the lesser number.

One Less Than

<p>1.</p> <p>1 2</p>	<p>2.</p> <p>3 4</p>
<p>3.</p> <p>5 6</p>	<p>4.</p> <p>6 5</p>
<p>5.</p> <p>7 8</p>	<p>6.</p> <p>9 8</p>

28 (twenty-eight) Concept of one less than

OBJECTIVE

To tell which of two numbers is one less

PACING

Level A All (1-3 guided)

Level B All (1-2 guided)

Level C All (1 guided)

VOCABULARY

one less than

MATERIALS

9 blocks, numeral cards for 0-9

SUGGESTIONS

Initial Activity Adapt the Initial Activity on page 27 to develop ideas such as 3 is one less than 4.

ACTIVITIES

1. Use Bulletin Board suggestion 1 in the Chapter 2 Overview to practice the concept of one less than.

2. Display a number line showing 0-9. Ask "What number is one less than 4?" and so on.

3. Two or more children may play a game. Each child can have a shuffled stack of numeral cards (1-9) face down on the table. Each child in turn turns over a card. The first child to tell the number that is one less gets the card. At the end of the game, the child with more cards wins.

Using the Book Panel 1: Ask, "How many gloves? (1)" Have the child trace the 1 in the blank. Then ask, "How many rings? (2)" Have the child trace the 2 in the blank. Have the child trace the line to match the groups to verify which has fewer members. Ask, "Which group has fewer members? (gloves)" Tell the child that 1 glove is less than 2 rings. Then have the child trace the ring around the 1 to show 1 is less than 2.

Panels 2-6: For each panel have the child write the numeral for the number of each group, then ring the numeral of the number that is one less.

OBJECTIVE

To draw groups of dots with one to nine members

PACING

- Level A All (guided)
- Level B All (1-4 guided)
- Level C All (1-2 guided)

MATERIALS

9 chairs, numeral and word cards for 1 through 9

BACKGROUND

See Item 3 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Arrange 9 chairs in a row. Have the child count them from left to right and match the numeral cards for 1 through 9 with the chairs. Then have the child match the word cards for one through nine with the chairs.

ACTIVITIES

- 1. The child can put the jigsaw puzzles (0-9) together and then put these in order.
- 2. Use a pocket chart. The child is to match group, numeral, and word cards in each row across as shown.

group	numeral	word
	0	zero
●	1	one

3. Shuffle the dot-numeral cards made by the child on index cards with a deck of word cards for 0-9. Use these cards to play Concentration as described in the Activity Reservoir. (Use 6 or 8 pairs at a time.)

How Many?

1.

1 2 3 4 5 6 7 8 9

one two three four five six seven eight nine

2.

one 1

3.

two 2

4.

five 5

5.

three 3

6.

four 4

7.

six 6

8.

eight 8

9.

seven 7

10.

nine 9

Using numbers in the cardinal sense (twenty-nine) 29

Using the Book Panel 1: Point out that there is one bead in the first picture. Read the word, one, below as the child looks at it. Then have the child repeat the word. Next call attention to the dashed 1 over the bead. Read the word, two, below and have the child repeat it. Point out the dashed 2 above and have the child trace it. Now direct the child to look at each picture, write the numeral above that shows how many, and then repeat the word name below the picture.


Panel 2: Direct attention to the crayon with “one 1” on it. Explain that the numeral and the word say “one,” so one dot is drawn below and colored.



Panel 3: Have the child look at the numeral to tell what the word is on the crayon. If unable to do this, the child can find the same numeral above, in panel 1, and count how many dots to draw. The child is to draw two dots.

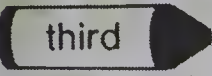

Panels 4-10: Have the child draw a set of dots to go with the word name

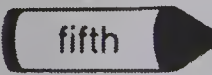

29

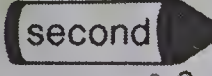

Which One?

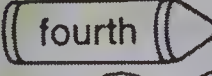

1. 
first second third fourth fifth

2. 


3. 


4. 


5. 


6. 


30 (thirty) Using numbers in the ordinal sense

AT HOME: Take turns playing games or doing things. Use words like "I'm first, you're second. He is third," and so on.

OBJECTIVE

To identify the first through the fifth object in an ordered group

PACING

Level A All (1-3 guided)
Level B All (1-2 guided)
Level C All (1-2 guided)

VOCABULARY

first through fifth

MATERIALS

5 chairs, numeral and word cards 1-5, word cards first through fifth

BACKGROUND

See Item 3 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Arrange 5 chairs in a row. Have the child count them from left to right and match the numeral cards for 1-5 with the chairs. Introduce the word cards first through fifth, and guide the child in matching them with the chairs.

ACTIVITIES

1. Have five children form a line. Give directions similar to the following for the children to follow.

(a) Will the second child jump up and down?

(b) Will the first child wave one hand?

(c) Will the fourth child hop?

2. See Bulletin Board suggestion 2 in the Chapter Overview.

3. Make similar worksheet for sixth through ninth.

Using the Book Panel 1: Ask the child to count the crayons, writing the correct numeral above each to show how many have been counted. When the child has written 1, 2, 3, 4, 5, in order, point out that the blue crayon is first. Have the child look at the word "first" and repeat it after you. Then ask, "Which color crayon is second? (green)" Have the child look at the word "second" and repeat it after you. Continue this way with third, fourth, fifth.

Panel 2: Direct attention to the row of bees and to the word "first" on the blue crayon here. Point out that the first bee is colored blue.

Panel 3: Direct attention to the row of fish and to the red crayon here. Have the child read the word on the crayon, "third." Then the child counts over 3 fish to color the third fish only.

Panels 4-6: Direct the child to color which one the crayon shows in each row.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To read a horizontal picture graph

PACING

- Level A 31 All (guided)
32 All (guided)
- Level B 31 All (guided)
32 All (1 guided)
- Level C 31 All (1-2 guided)
32 All

VOCABULARY

picture graph, row

MATERIALS

See Bulletin Board suggestion 3 of the Chapter Overview.

BACKGROUND

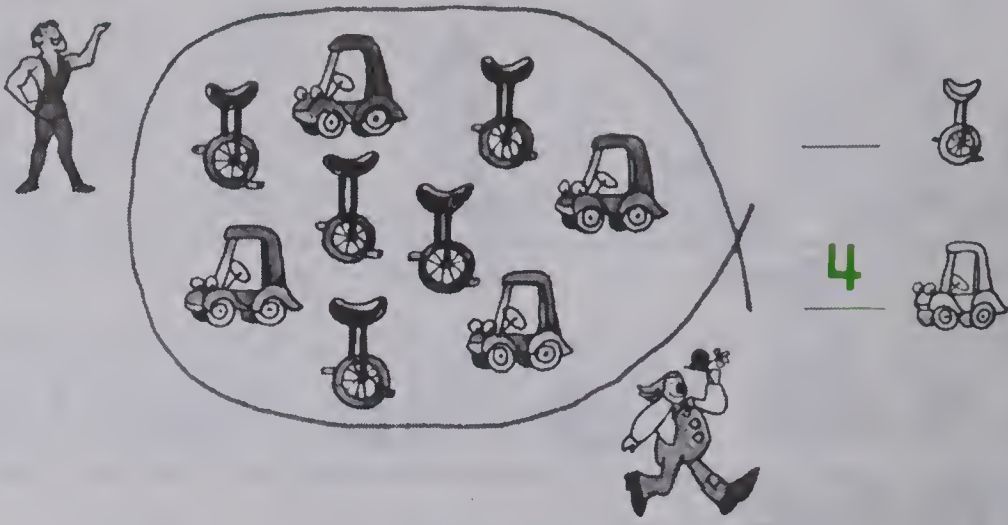
See Item 4 of the Chapter Overview Background.

SUGGESTIONS

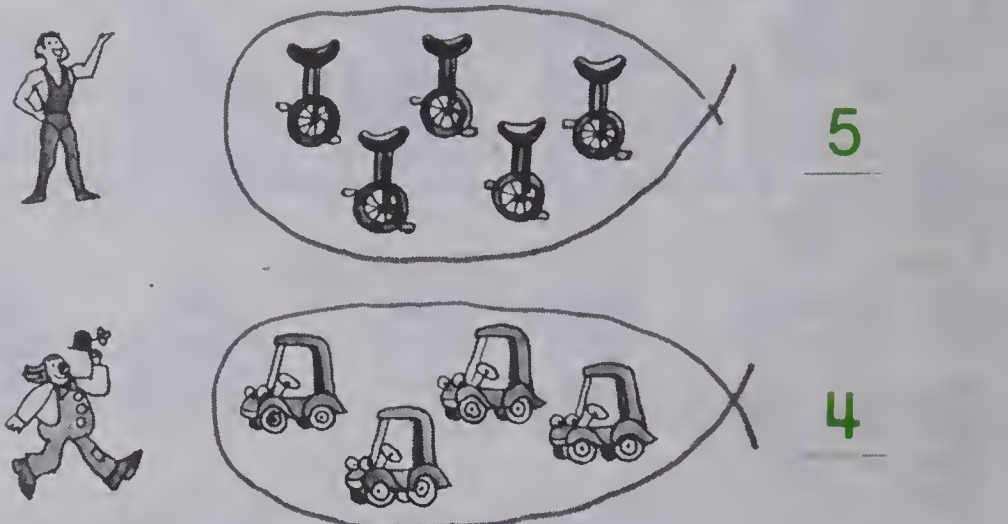
Initial Activity Create a horizontal picture graph as described in Bulletin Board suggestion 3 in the Chapter Overview.

A Picture Graph

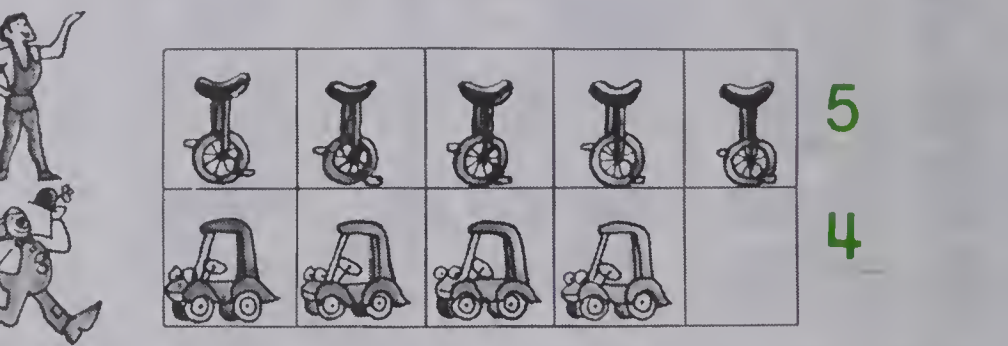
1.



2.



3.



Reading a horizontal picture graph (thirty-one) 31

Using the Book Panel 1: Tell the child that the acrobat takes care of the unicycles and the clown takes care of the small cars. Ask, "How many unicycles are inside the ring? (5)" Have the child trace the 5 in the answer blank in front of the unicycle. Then ask, "How many cars are inside the ring? (4)" Have the child write the answer in the blank next to the car.

Panel 2: Explain that this panel shows the same pictures as in panel 1. Point out that the unicycles are arranged in a group with the acrobat in front and the cars are arranged in another group with the clown in front. Have the child count the objects again and write the answers in the blanks. Elicit that it is easier to count when objects are arranged in separate groups.

Panel 3: Explain that this panel shows rows, a (horizontal) picture graph. Elicit that each object is shown within a square on a grid. Point out that the row of unicycles is labeled with the acrobat and the row of cars is labeled with the clown. Have the child count each row and write the answer in the blank.

31

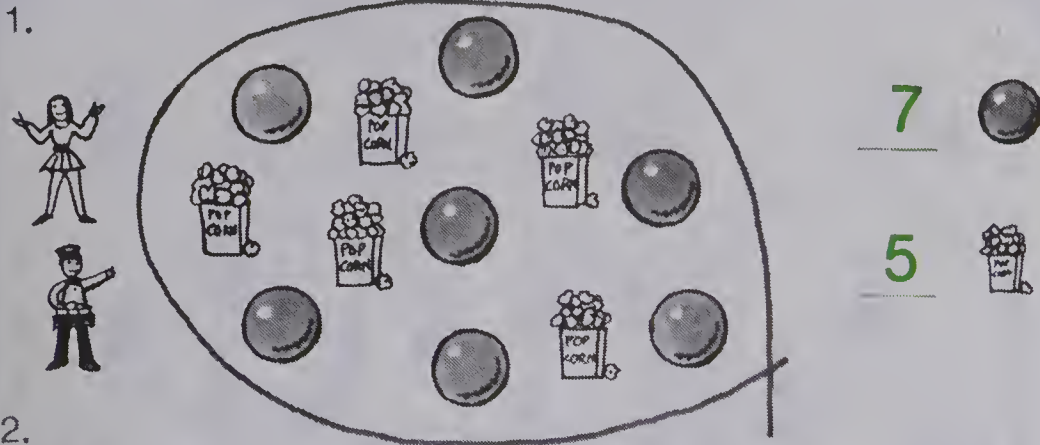
ACTIVITIES

1. You may provide a worksheet as shown below for the child to color the indicated number of blocks: red across the first row and blue across the second row.

6									
9									

2. Involve the child in creating a horizontal picture graph. Distribute pictures cut from a magazine. Have the child use themes such as boys and girls in the family, erasers and pieces of chalk, etc.

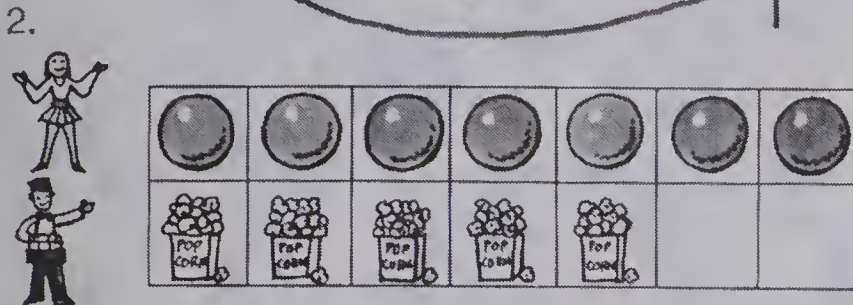
3. The child can participate in making a horizontal (row) picture graph. Have the child cut letters from a magazine. For example, have the child cut 5 letter G's or g's (for girls) and 4 letter B's or b's (for boys). Then the child can paste them in rows and write the appropriate numeral in front of each row.



7

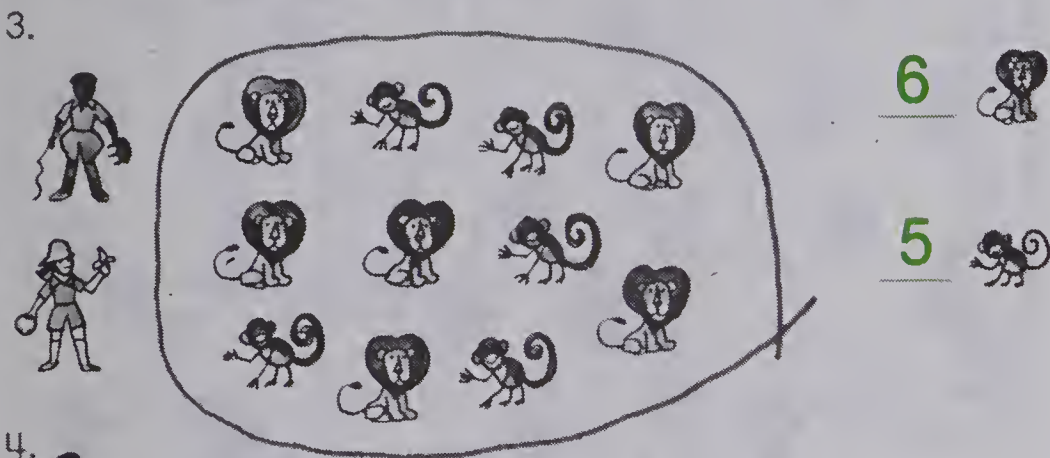


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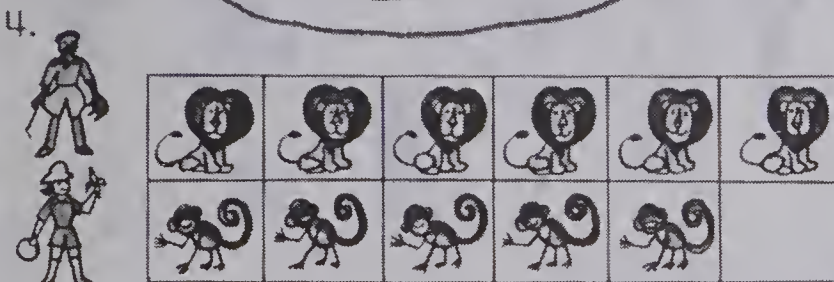
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6



5



6

5

32 (thirty-two) Practice

Using the Book Panel 1: Tell the child that the juggler wants to gather all the balls and the vendor wants to get together all the boxes of popcorn. Ask, "How many balls are in the ring? (7)" Have the child write the answer in the blank next to the ball. Then ask, "How many boxes of popcorn are in the ring? (5)" Have the child write the answer.

Panel 2: Ask, "How is this picture different from the picture above? (All the balls are in a row and all the popcorn is in a row.)" Point out that the row of balls is labeled by the juggler and the row of popcorn is labeled by the vendor. Have the child count each row and write the answer in the blank. Remind the child that this is a picture graph. Elicit that when objects are arranged in rows, it is easier to count and to see there are more balls than boxes of popcorn.

Panels 3-4: Follow procedures similar to panels 1-2. Refer to the people as a lion tamer and a monkey trainer.

OBJECTIVE

To read a vertical picture graph

PACING

Level A	33 All (guided)
	34 All (guided)
Level B	33 All (guided)
	34 All (guided)
Level C	33 All (1-2 guided)
	34 All

VOCABULARY

column

BACKGROUND

See Item 4 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Review the horizontal picture graph constructed in the Initial Activity on page 31. Explain that sometimes pictures are arranged in columns rather than in rows. To illustrate this, you may turn the horizontal picture graph around to show columns. Have the child count how many are in each column from bottom to top.

You may wish to have a discussion about what floral designers do. You might ask leading questions such as, "Do you think both men and women can be floral designers? (yes) Do they use vases, planters and baskets? (yes)"

Another Picture Graph

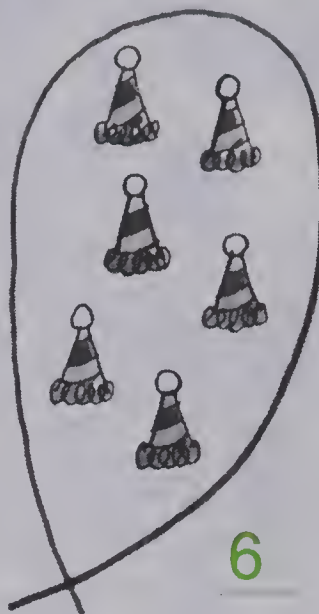
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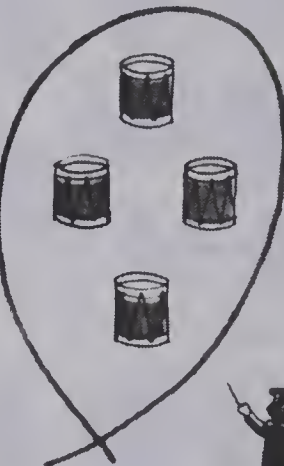
4



2.



6



4



3.



6



4

Reading a vertical picture graph (thirty-three) 33

Using the Book Panel 1: Tell the child that the clown is trying to count the hats and the bandleader is trying to count the drums. Have the child count the hats in the ring and write the answer below in the blank next to the hat. Do the same for the drums.

Panel 2: Explain that this panel shows the same pictures as in panel 1. Point out that the hats are in a group by the clown and the drums are in another group by the bandleader. Have the child count the objects in each group and write the answer in the appropriate blank. Elicit that it is easier to count when the objects are arranged in separate groups.

















Panel 3: Explain that this panel shows columns, and is a (vertical) picture graph. Elicit that each object is shown within a square on a grid. Point out that the column of hats is labeled by the clown and the column of drums is labeled by the bandleader. Have the child count each column (not including the people) and write the answer in the blank below.

Arranging Flowers

1.



2.

7

4

5



7



4



5

AT HOME. Give the child a group of objects (but no more than 9) such as buttons and pennies, etc. Have the child arrange them in rows by kind for ease in counting. Ask "How many?"

34 (thirty-four) Practice

ACTIVITIES

1. You may provide a worksheet for the child to color the indicated number of blocks, yellow up the first column and green up the second column.

8

7

2. Involve the child in creating a vertical picture graph. Distribute pictures cut from a magazine. Pictures of dogs and cats the children have or want as pets may be used this time.

3. The child can participate in making the vertical (column) picture graph. See Bulletin Board suggestion 4 in the Chapter Overview. Have the children cut out their own pictures.

EXTRA PRACTICE

Ask students to bring pictures of different-colored flowers. Then make a group or class graph to show red flowers, blue flowers, etc. If the number of flowers of any color is kept to nine or less, the number can be written for the flowers as shown on this page.

Using the Book Explain that the people are floral designers and that they intend to arrange the flowers. See Career Awareness in the Chapter Overview.

Panel 1: Tell the child that the floral designers need to know how many of each kind of flower there is in the ring. Have the child count the daisies, tulips, and roses and write the answer in the appropriate blank below.

Panel 2: Ask, "How is this picture different from the one on the left? (Each different flower is arranged in a separate column.)" Tell the child that each column is labeled for one of the floral designers. Ask the child to tell, by looking at the graph, which set of flowers has the most members (daisies); and which has the fewest? (tulips) Have the child count each kind of flower and write the answer in the blank below. Elicit that it is easier to count the flowers when they are arranged in columns (a picture graph). Elicit that it is easier to compare, without counting, using a graph.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To evaluate achievement of the chapter objectives

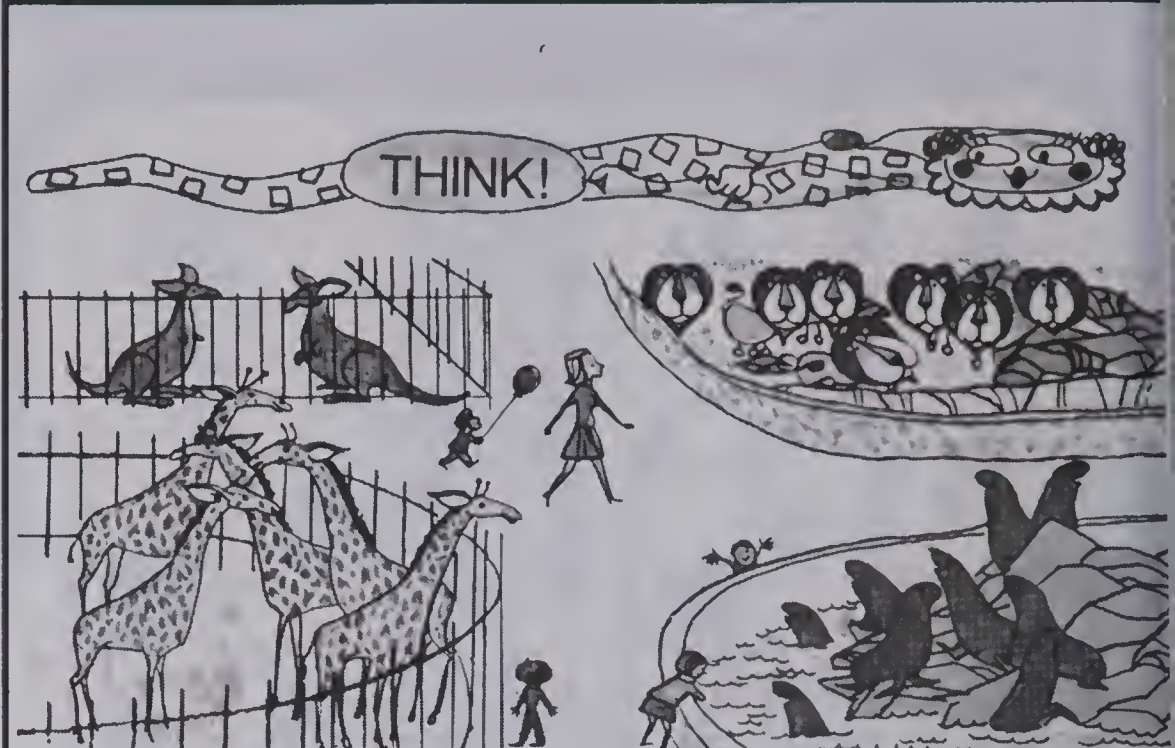
PACING

Level A	35 All
	36 All
Level B	35 All
	36 All
Level C	35 All
	36 All


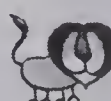



SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

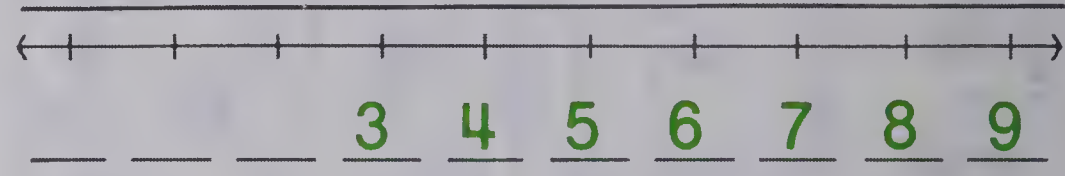
THINK!




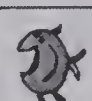


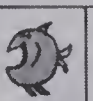
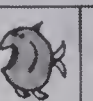
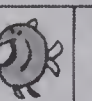
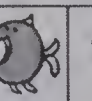
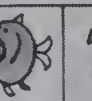








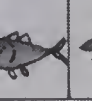

1.



57902

2.



3.

9 8 

Chapter 2 Test (thirty-five) 35

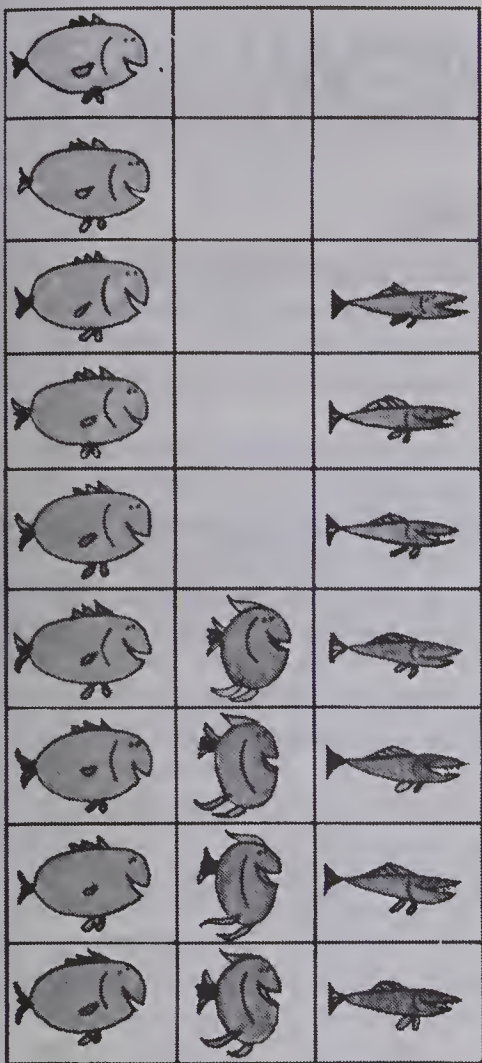
Using the Book This is a diagnostic test. The page references are given for re-teaching as needed. The letter indicates the objective.

Panel 1: Call attention to the picture of some sets of animals at the zoo. Then have the child count how many of each kind of animal is shown. Tell the child not to count the pictures directly above the blanks. Have the child write each numeral in the blank below the picture to tell how many of each kind. [page 25 A, B]

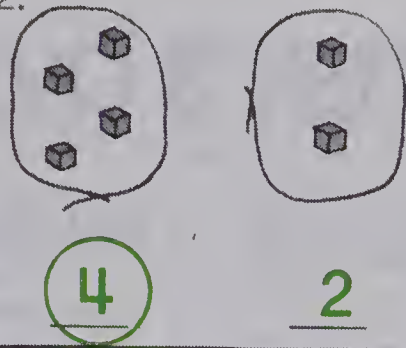
Panel 2: The child is to fill in each blank, counting by ones. Point out that 0, 1, 2 have already been written. Have the child begin by tracing over the dashed 0, 1, 2 and then continue in order. [page 26 C]

Panel 3: The child is to look at the picture graph and count how many fish each boy caught. Then write the correct numeral below to tell how many of each. [page 31 F]

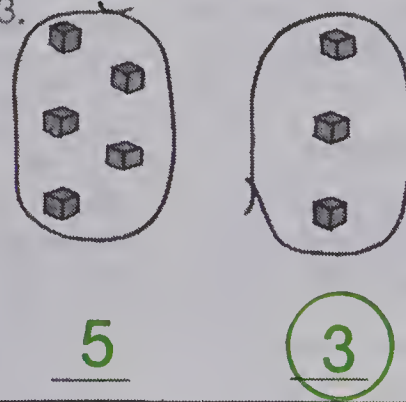
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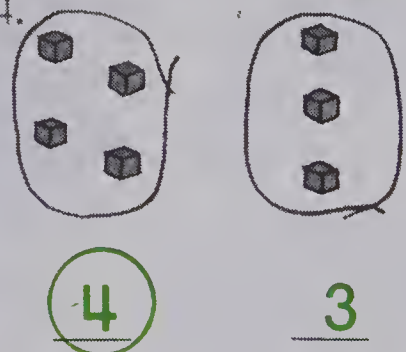
2.



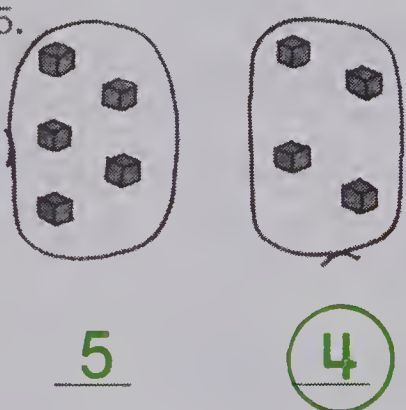
3.



4.



5.



ACTIVITIES

1. Display pairs of numeral cards. For example, show cards with 3 and 5 written on them. Have the child read the numerals. Then review the concepts of greater than, less than, one greater than, and one less than.

2. Use numeral cards to provide practice in the order of numbers through 9.

3. Have pairs of children play the following game. Give each child a set of numeral cards for 0 through 9. Each player places all the cards face down. Then simultaneously they draw a card and display it face up in the center of the table. The first one to make a true statement, beginning with that child's card such as, 7 is one less than 8, wins a point. If both turn up the same numeral, there is no score.

4. Provide the child with grids to make horizontal and/or vertical picture graphs. Assist the child in choosing a topic or activity to graph. When the graph is completed you may have the child describe it to other children and display it on the worktable or bulletin board.

5. Play the game Bingo as described in the Activity Reservoir. Place 0-9 in different positions on different cards. Call the number by phrases such as "one greater than four, one less than 8", and so on.

Using the Book This is a diagnostic test. The page references are given for re-teaching as needed. The letter indicates the objective.

Panel 1: Call attention to the picture graph on the left side of the page. Then direct the child to count how many fish each child caught and write the numerals below. [page 36 F]

Panel 2: Have the child write how many blocks in each set. Then ring the numeral of the greater number. [page 23 D]

Panel 3: Have the child write how many blocks in each set. Then ring the numeral of the lesser number. [page 27 D]

Panel 4: Have the child write how many blocks in each set. Then ring the numeral of the number that is one greater. [page 24 E]

Panel 5: Have the child write how many in each set. Then ring the numeral of the number that is one less. [page 28 E]

CHAPTER 3 OVERVIEW

LEVEL 3

Addition and subtraction, sums 5 or less, as well as related addition and subtraction sentences, are introduced in this chapter.

OBJECTIVES

- A To recognize that changing the order of the addends does not change the sum
- B To give sums when zero is an addend
- C To give differences involving zero in subtraction
- D To solve related sentences
- E To add using the vertical form, sums 5 and less
- F To subtract using the vertical form, from 5 and less
- G To solve pictured problems, completing addition and subtraction sentences
- H To choose an addition sentence to go with a pictured problem
- I To choose a subtraction sentence to go with a pictured problem

VOCABULARY

add 39
plus 39
addend 41
sum 41
equals 41
addition sentence 41
subtract 53
minus 53
subtraction sentence 55
difference 55

BACKGROUND

1. The concept of addition is developed in physical situations involving two disjoint groups that are joined.

In an addition sentence such as $2 + 3 = 5$, the child should learn to identify the numbers 2 and 3 as addends and the number 5 as the sum.

When zero is one of the addends, the sum is always the other number. For example, $3 + 0 = 3$ and $0 + 3 = 3$.

The order property of addition is introduced in this Chapter. Changing the order of the addends does not change the sum. This law is known as the Commutative Property of Addition. For example, since $2 + 3 = 5$ then $3 + 2 = 5$.

2. The concept of subtraction is developed in physical situations in which part of a given group is taken away from the group.

When zero is subtracted from a number, the difference is always the number subtracted from ($4 - 0 = 4$).

When a number is subtracted from itself, the difference is always zero ($3 - 3 = 0$).

MATERIALS

- dot group cards, addition and subtraction for 5 (See the Activity Reservoir.)
- 5 blue blocks
- 5 red blocks
- a chart with different colored rows of dots (See pages 43 and 57.)
- 2 crayon boxes
- several crayons
- construction paper
- pictures of 1 apple, 3 oranges

CAREER AWARENESS

Nurses [44]

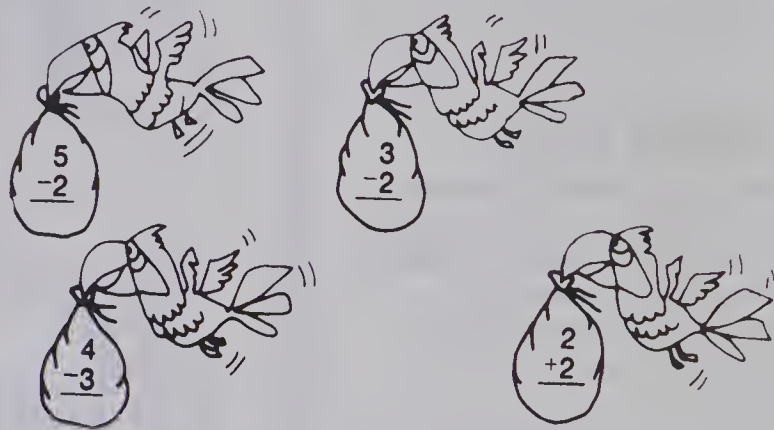
Some nurses provide skilled bedside nursing care in hospitals and carry out medical treatment plans prescribed by physicians. Other nurses care for patients in doctors' offices, clinics, homes, and schools. Still other nurses assist doctors in operating rooms. In general, nurses give medicine, record progress, and assist in the recuperation of patients.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that nurses perform a service to the community. It is their expertise that often saves a life.

Photo description: The nurse is taking a patient's blood pressure.

BULLETIN BOARD

- 1-a. Display pictured stories involving joining groups similar to those on pages 37 and 38. Allow the children to study and discuss what is happening in the stories and then assist them in writing a story. The story should elicit that 2 groups are joined to form one group. Display the children's stories on the bulletin board next to the pictures.
- b. Adapt the above bulletin board when introducing separating sets in preparation for subtraction.
- 2. Create a display similar to the one below, involving addition and subtraction sums to 5 in vertical form.



Tack a plastic bag with several groups of numeral cards for 0 through 5 at the bottom edge of the bulletin board. Challenge children to take numeral cards from the bag and tack them onto the appropriate bird to show the sum or difference.

- 3. The children might enjoy playing "Mail Carrier." From oaktag make about 10 houses. Make set of windows on the houses as shown below.



Prepare cards with number names such as 1 + 1, 2 + 2, etc. Place the cards in a plastic bag and tack it to the bulletin board. Tack another bag to the bulletin board containing several sets of numeral cards for 0 through 5. These 2 bags of cards represent letters to be delivered. Challenge children to deliver the correct letters to each house as shown in the diagram above.

Make this activity a contest to see who is the fastest "Mail Carrier" by using a 3 min egg timer.

OBJECTIVES

To write how many are in each of two groups

To show how many in all when the groups are joined

PACING

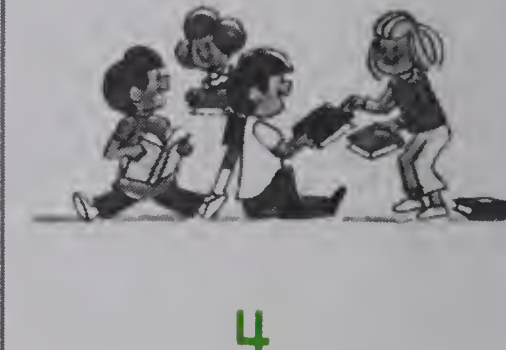
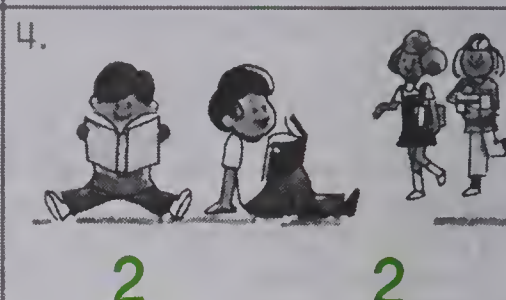
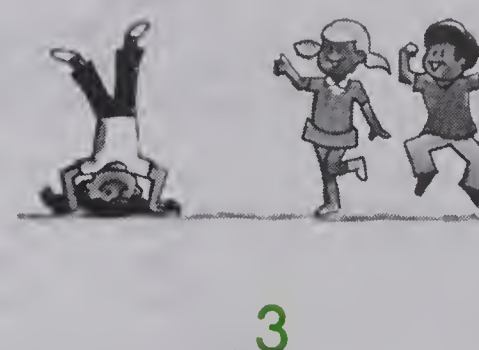
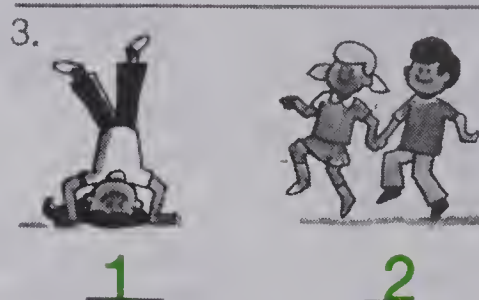
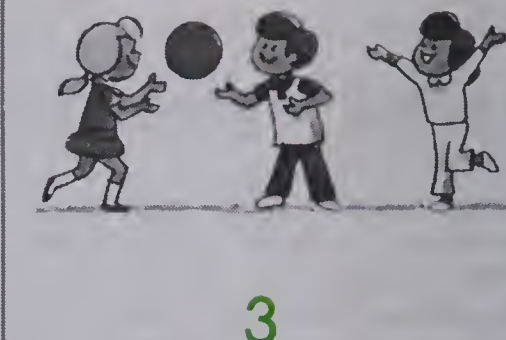
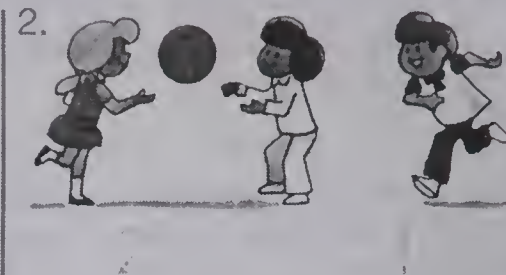
Level A	37 All (guided)
	38 All (1 guided)
Level B	37 All (1-2 guided)
	38 All
Level C	37 All (1-2 guided)
	38 All

SUGGESTIONS

Initial Activities 1. Dramatization will be helpful for understanding the pictures in the lesson. Have 1 girl stand and have 1 boy join the girl. Ask, "How many in all?" Continue with 2 girls joined by 1 boy, 1 boy joined by 2 girls, and 2 boys joined by 2 girls.

2. Elicit the idea that a group with 1 member joined to one with 2 members forms a group of 3 members. You may repeat this using other combinations. The union of the two groups should be 4 or less.

How Many in All?



Getting ready to add (thirty-seven) 37

Using the Book Panel 1: Ask the child to point to the girl playing with a yo-yo. Have the child trace the 1 below the girl. Then ask, "How many boys are coming to play? (1)" Have the child trace the 1 below the boy. Next call attention to the two children together. Ask, "How many in all? (2)" Have the child trace the 2. Emphasize that a group of one joined to a group of one makes a group of two.

Panel 2: Ask, "How many children are playing with the ball?" Have the child trace the 2. Then ask, "How many are coming to play?" Have the child trace the 1. Have the child point to the group with the children all together. Ask, "How many in all?" Have the child write 3.

Panels 3-4: Direct the child to write how many are in each group and then write how many in all when the groups are joined.

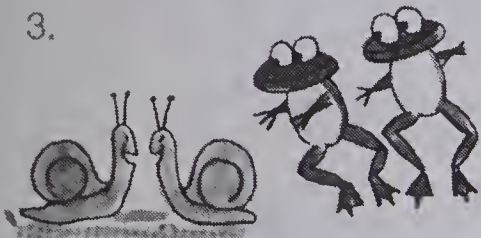
1.

213

2.

314

3.

224

4.

134

ACTIVITIES

1. To provide practice, groups of different colored blocks may be used. Give the child 1 red block and 2 blue blocks. Ask, "How many red blocks? (1) How many blue blocks? (2) How many blocks in all? (3)" Use other groups less than five.

2. See Bulletin Board suggestion 1-a. in the Chapter Overview.

3. Give the child a piece of paper. Have the child draw 2 red dots and 2 blue dots and write the corresponding numerals underneath each. Then have the child write how many in all below. Use other combinations less than five.

Using the Book Panel 1: Ask the child, "How many turtles are on the grass? (2)" Have the child write 2 below. "How many baby chicks are coming? (1)" Have the child write the numeral below. Then ask, "How many in all? (3)" Have the child write the numeral 3.

Panels 2-4: Have the child continue writing how many in each group and then how many in all.

OBJECTIVES

To relate addition to joining two groups
To introduce the plus sign

PACING

Level A	39 All (guided) 40 All (1 guided)
Level B	39 All (1-2 guided) 40 All
Level C	39 All (1-2 guided) 40 All

VOCABULARY

add, plus

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Review the concept of joining two groups by showing a group with 2 objects and a group with one object, each within a ring. Then show the joining of the groups by drawing a larger ring around the 2 groups.

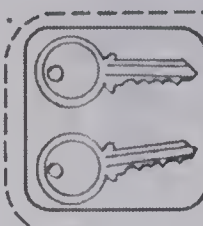



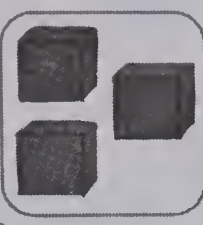


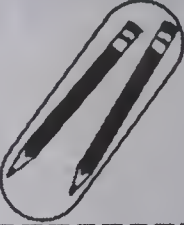
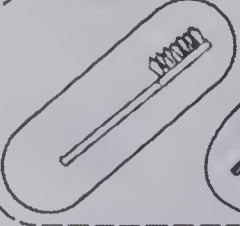
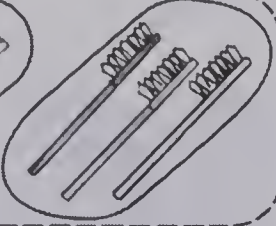
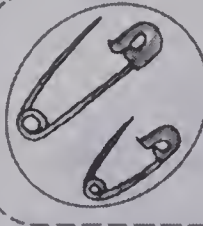
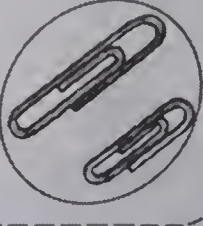
Challenge the child to tell the number of members in each group and then the number of members in all. Relate $2 + 1$ to this and assist the child in reading 2 plus 1. Write 3 below $2 + 1$. Elicit the idea that when we add 2 and 1 we get 3 which tells how many in all. Repeat to develop:

$$\begin{array}{r} 1 + 2 \\ 3 \end{array}$$

$$\begin{array}{r} 2 + 2 \\ 4 \end{array}$$

Develop the idea that the plus sign means to add. It is used with numbers to show what happens when two groups are joined.

Addition

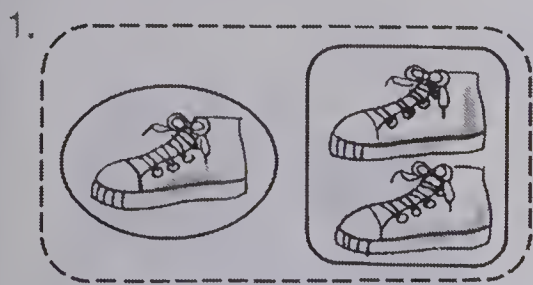
<p>1.  </p> $\begin{array}{r} 2 + 1 \\ 3 \end{array}$	<p>2.  </p> $\begin{array}{r} 1 + 1 \\ 2 \end{array}$
<p>3.  </p> $\begin{array}{r} 3 + 1 \\ 4 \end{array}$	<p>4.  </p> $\begin{array}{r} 1 + 2 \\ 3 \end{array}$
<p>5.  </p> $\begin{array}{r} 1 + 3 \\ 4 \end{array}$	<p>6.  </p> $\begin{array}{r} 2 + 2 \\ 4 \end{array}$

Introducing addition, the plus sign (thirty-nine) 39

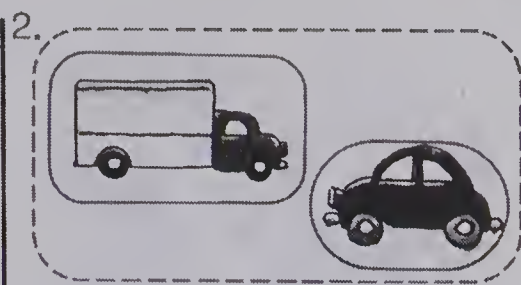
Using the Book Panel 1: Have the child tell how many are in the first group of keys and then how many are in the second group of keys. Next have the child trace the dashed ring around both groups together. Explain that this is a way to show that we are putting the group together or joining them. Ask, "How many in all? (3)" Have the child trace the 2 and 1 and explain that 2 plus 1 means that we are adding the numbers of the two groups. Tell the child to trace the 3 and explain that it tells how many in all, so 3 is the number we get when we add 2 and 1.

Panel 2: Ask, "How many blocks? in the first group? How many in the second group? (1)" Have the child trace the dashed ring around these groups and the numerals in the blanks. Ask, "Why was the 1 placed in the first blank? (1 is the number of blocks in the first group) Why was 1 placed in the blank after the plus sign? (1 is the number of blocks in the second group) What number tells how many in all? (2)" Have the child write a 2 in the blank.

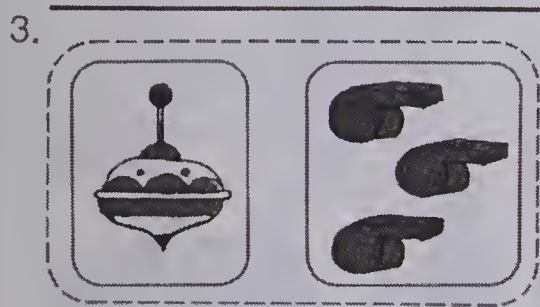
Panels 3-6: Have the child look at the other pictures and fill in the blanks.



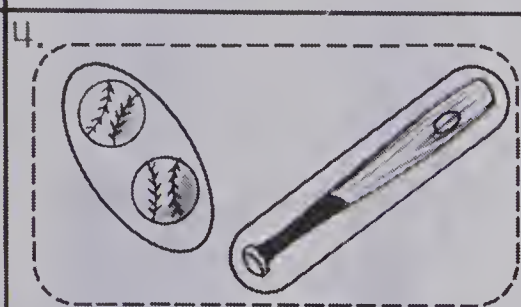
$$\begin{array}{r} 1 \\ + \\ 2 \\ \hline 3 \end{array}$$



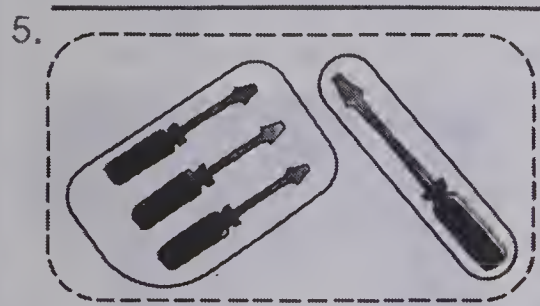
$$\begin{array}{r} 1 \\ + \\ 1 \\ \hline 2 \end{array}$$



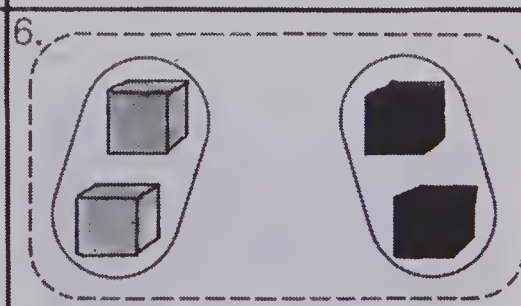
$$\begin{array}{r} 1 \\ + \\ 3 \\ \hline 4 \end{array}$$



$$\begin{array}{r} 2 \\ + \\ 1 \\ \hline 3 \end{array}$$



$$\begin{array}{r} 3 \\ + \\ 1 \\ \hline 4 \end{array}$$



$$\begin{array}{r} 2 \\ + \\ 2 \\ \hline 4 \end{array}$$

40 (fourty) Practice

ACTIVITIES

1. Have 2 boys joined by 2 girls. Write + on the chalkboard. Have the child fill in the blanks. Continue this procedure with 1 boy joined by 3 girls and so on for 4 or less in all.

2. Several additional combinations for 4 or less, as $1 + 3$, may be written on the chalkboard. The child may draw a dot group for each number in the addition and ring the two groups together. Then the child can copy the addition combination and write how many in all below.

3. Using dot cards and these numeral cards (or a worksheet), the child can enjoy this matching activity.

	$\begin{array}{r} 2 + 1 \\ 3 \end{array}$
	$\begin{array}{r} 1 + 1 \\ 2 \end{array}$
	$\begin{array}{r} 3 + 1 \\ 4 \end{array}$
	$\begin{array}{r} 1 + 2 \\ 3 \end{array}$
	$\begin{array}{r} 2 + 2 \\ 4 \end{array}$
	$\begin{array}{r} 1 + 3 \\ 4 \end{array}$

Using the Book Panel 1: Direct attention to + . Assist the child in writing in the first blank, how many tennis shoes are in the first group. Have the child write in the blank after the plus sign, how many tennis shoes are in the other group. Have the child trace the dashed ring around both groups and write in the blank below how many in all, or the number we get when we add $1 + 2$.

Panels 2-6: Tell the child to look at the pictures and fill in the blanks.

OBJECTIVES

- To complete addition sentences for action problems
- To add sums 4 or less
- To introduce the equals sign

PACING

- | | |
|---------|---------------------|
| Level A | 41 All (1-4 guided) |
| | 42 All (1 guided) |
| Level B | 41 All (1-2 guided) |
| | 42 All |
| Level C | 41 All (1 guided) |
| | 42 All |

VOCABULARY

addends, sum, equals, addition sentence

MATERIALS

3 blue blocks, 3 red blocks

SUGGESTIONS

Initial Activities 1. Display a group with 2 blue blocks and a group with 1 red block. Challenge the child to tell the number of each. Assist the child in relating the addition expression $2 + 1$ to this. You might join the groups and ask the child how many in all. Explain that the numbers added are called addends and the number in all is a sum. You may write $2 + 1 = 3$ and read it as "2 plus 1 equals 3." Explain that $=$ is an equals sign and we write this sign between two names for the same number. Stress that $2 + 1$ is a name for three and 3 is a name for three.

2. Display 2 red blocks and 2 blue blocks. Challenge the child to tell how many blocks are in each group. Guide the child in joining the groups and telling how many in all. Elicit the addition sentence two plus two equals four. Write $2 + 2 = 4$. Challenge the child to name the addends and the sum.

Addition Sentences



$$3 + 1 = \underline{\quad}$$



$$2 + 1 = \underline{3}$$



$$1 + 2 = \underline{3}$$



$$1 + 1 = \underline{2}$$



$$1 + 3 = \underline{4}$$



$$2 + 2 = \underline{4}$$

Introducing the equals sign in addition (forty-one) 41

Using the Book Panel 1: Discuss the story in the picture as follows, "3 baseball players are standing near home base. 1 player is coming to join them." Call attention to the addition sentence $3 + 1 = 4$. Say, "3 plus 1 equals 4," and have the child trace the 4. Explain that this is an addition sentence. "3 and 1 are addends. They tell what numbers are being added. 4 is the sum. It tells how many in all." Have the child read 3 plus 1 equals 4.

Panels 2-6: Use procedures similar to panel 1. Explain to the child that we are adding the number of people in each picture.

1.



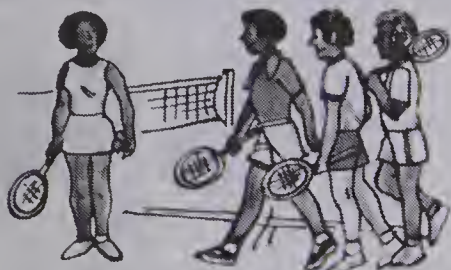
$$2 + 1 = \underline{3}$$

2.



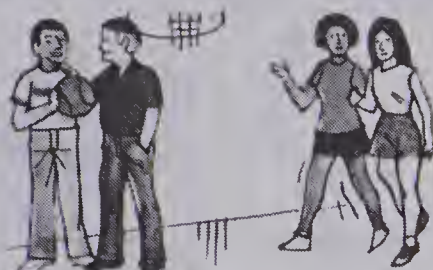
$$3 + 1 = \underline{4}$$

3.



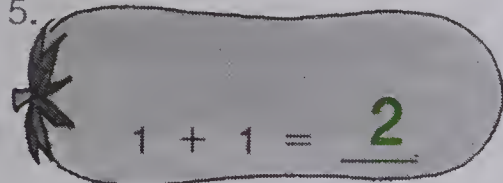
$$1 + 3 = \underline{4}$$

4.



$$2 + 2 = \underline{4}$$

5.



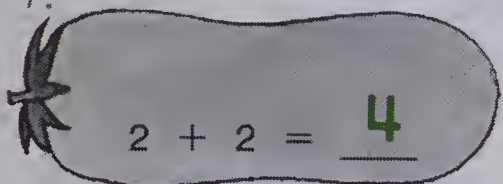
$$1 + 1 = \underline{2}$$

6.



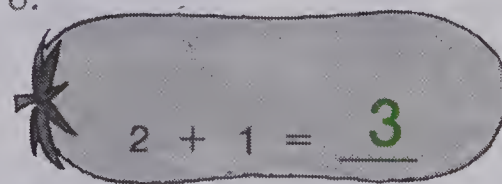
$$1 + 2 = \underline{3}$$

7.



$$2 + 2 = \underline{4}$$

8.



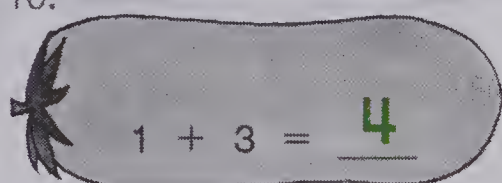
$$2 + 1 = \underline{3}$$

9.



$$3 + 1 = \underline{4}$$

10.



$$1 + 3 = \underline{4}$$

42 (fourty-two) Practice

ACTIVITIES

1. Using a display board (flannel or magnetic) show joining groups that can be related to these sentences.

$1 + 1 =$

$1 + 3 =$

$1 + 2 =$

$2 + 2 =$

2. You may fold 3 sheets of paper and staple them together in the middle to make a book for each child. The child can copy these addition sentences on the first page, leaving a three-finger space between each line.

$1 + 1 =$

$1 + 2 =$

$2 + 2 =$

$2 + 1 =$

$3 + 1 =$

$1 + 3 =$

Ask the child to draw red dots and blue to show each sum. Remind the child to ring how many in all and complete the sentence as $2 + 1 = 3$. This Addition Book will be completed later.

3. Adapt Jigsaw Puzzle Cards as described in the Activity Reservoir. Use addition sentences for sum 4 or less.

Using the Book Panel 1: Call attention to $2 + 1 = \underline{\quad}$. Associate the 2 with the 2 men sitting and the 1 with the man coming to join them. Ask, "How many in all? (3)" Read, "2 plus 1 equals 3." Have the child write 3. Explain that 3 is the sum.

Panels 2-4: Tell the child to look at each picture and write each sum.

Panels 5-10: The child is to write each sum to complete the addition sentences. If the child must count to find each sum, encourage making a dot set picture of only the second number, as $2 + \bullet 2 \bullet = \underline{\quad}$. Encourage the child just to think of the first number, two, and then continue counting the dots as three, four. Then the child can write 4.

OBJECTIVE

To complete addition sentences for sum 5 or less

PACING

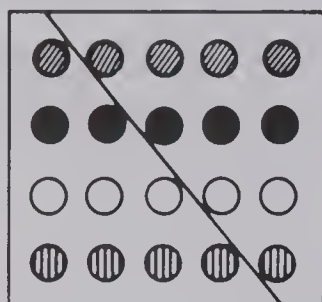
Level A All (1 guided)
Level B All (1 guided)
Level C All

MATERIALS

large paper for a chart

SUGGESTIONS

Initial Activity Make a dot chart with each row in a different color:



The child says the addition sentence that goes with each row. The first row shows $1 + 4 = 5$.

ACTIVITIES

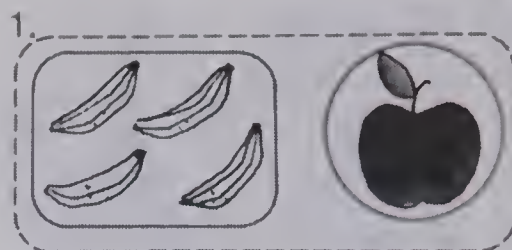
1. Display several addition sentence practice cards, as $1 + 3 =$, through sum 5. Using blocks, show 1 red block and 3 blue blocks, for example. The child tells the number in each set and then selects the addition card that goes with the blocks.

2. The child can copy these on the second page of the Addition Book. See page 46.

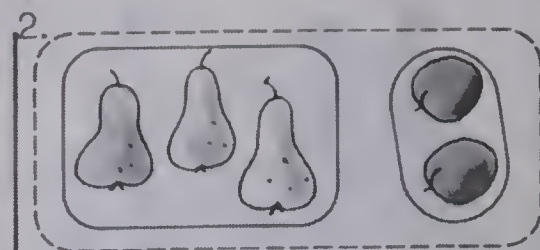
$1 + 4 =$ $2 + 3 =$
 $4 + 1 =$ $3 + 2 =$

3. Provide Dot Set Cards, as described in the Activity Reservoir, for sum 5 or less. The child writes an addition sentence for each.

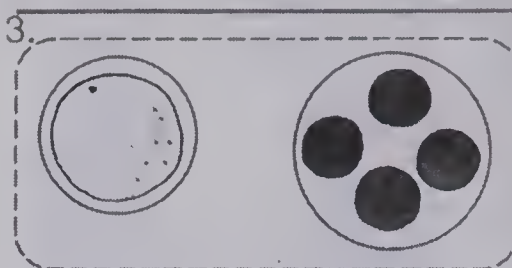
Five



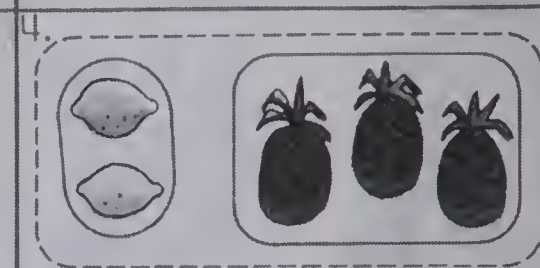
$$4 + 1 = \underline{5}$$



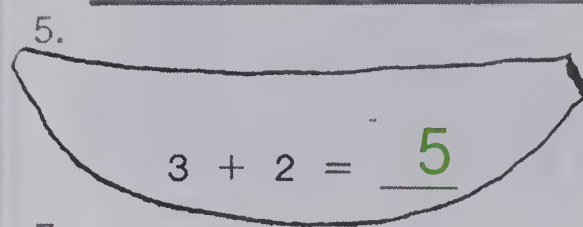
$$3 + 2 = \underline{5}$$



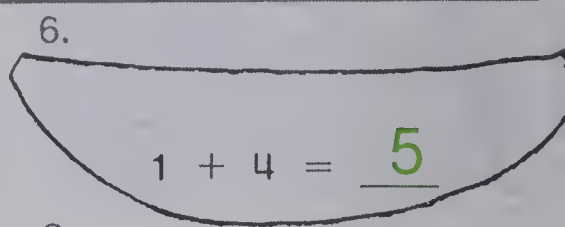
$$1 + 4 = \underline{5}$$



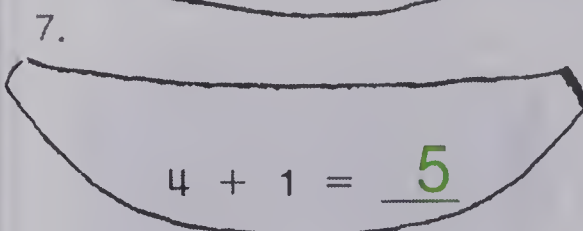
$$2 + 3 = \underline{5}$$



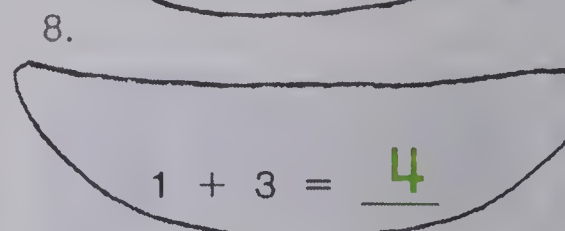
$$3 + 2 = \underline{5}$$



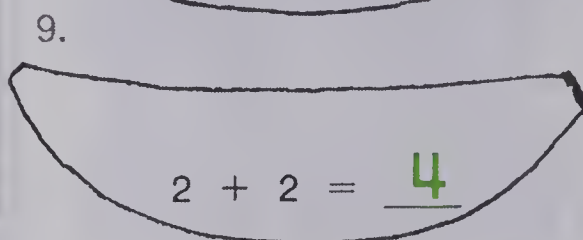
$$1 + 4 = \underline{5}$$



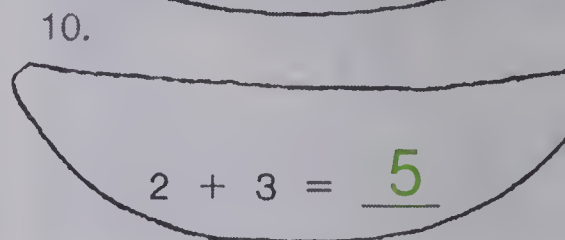
$$4 + 1 = \underline{5}$$



$$1 + 3 = \underline{4}$$



$$2 + 2 = \underline{4}$$



$$2 + 3 = \underline{5}$$

AT HOME Have the child group pictures or real objects as above and ask "How many in all?"

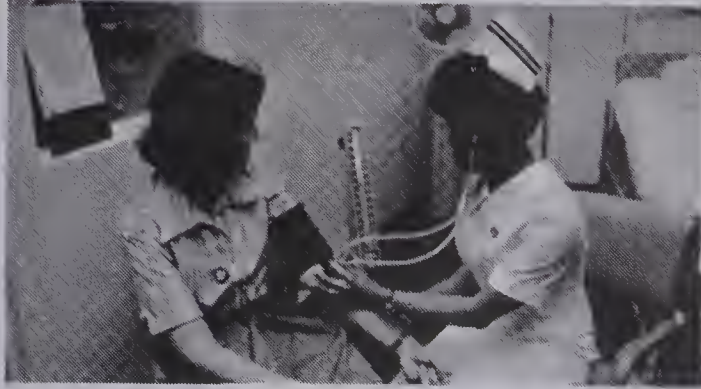
Adding, sum 5 (forty-three) 43

Using the Book Panel 1: You might ask the child, "What numbers are being added? (4 and 1) What are the addends? (4 and 1)" Assist the child in relating each number to the appropriate group. Ask, "How many in all? (5) What is the sum? (5)" Then have the child read the addition sentence and trace the sum.

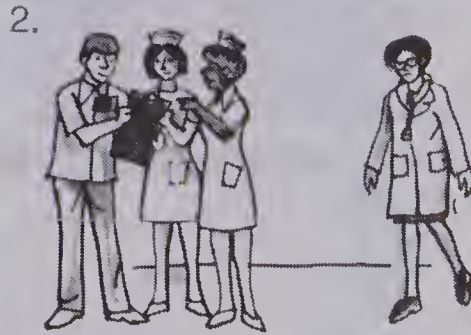
Panels 2-4: Have the child look at each picture and write the sum for each. When the child has completed these sentences, you may have the child notice that all the groups when joined have 5 members, so the sum in each sentence is 5.

Panels 5-10: Assist the child in reading and completing each addition sentence on the bananas. If the child has difficulty, you might suggest to the child to draw groups to illustrate each sentence with objects and then find the sum.

Nurses



$$2 + 3 = \underline{\quad}$$



$$3 + 1 = \underline{4}$$



$$4 + 1 = \underline{5}$$



$$2 + 2 = \underline{4}$$

44 (forty-four) Using addition to interpret a pictured problem

OBJECTIVES

To complete addition sentences, sum 5 or less

To solve pictured problems using addition

PACING

Level A All (1 guided)

Level B All (1 guided)

Level C All (1 guided)

SUGGESTIONS

Initial Activity Have the child observe a dramatization of the sentence $2 + 3 = 5$. Write the sentence $2 + 3 = \underline{\quad}$ and challenge the child to find the sum.

You may wish to discuss what nurses do. Talk about the difference in what school nurses do and hospital nurses do. Ask leading questions to encourage discussion. "Are men and women nurses? (yes) What do nurses do when you are sick in school? In the hospital?"

ACTIVITIES

1. Play Stop the Magician from the Activity Reservoir with addition sentences (sums 5 or less).

2. Have the school nurse come in and talk to the children about the things a nurse does.

3. Take the children to the school nurse's office and discuss various things seen there.

4. You may wish to have the child cut pictures from magazines of objects associated with nursing. The child can use these pictures to make a collage.

Using the Book Discuss the picture at the top of the page. If any of the children have been under the care of a nurse, they may tell how the nurse helped them when they were sick. See Career Awareness in the Chapter 3 Overview.

Panel 1: Encourage the child to tell a story about this picture, such as 2 nurses are talking and 3 other nurses are coming to join them. Ask, "How many nurses in all are in this picture? (5)" Read "2 plus 3 equals what?" Tell the child to trace the sum 5.

Panels 2-4: Ask the child to look at each of the other pictures to see what is happening. Then the child is to read and complete the addition sentence about each picture.

OBJECTIVE

To add when zero is one of the addends

PACING

Level A	45 All (guided) 46 All
Level B	45 All (1-3 guided) 46 All
Level C	45 All (1-3 guided) 46 All

MATERIALS

two crayon boxes, five crayons

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activities 1. Display a crayon box. You might create a story about the crayon boxes as follows: "Sam had 1 crayon in the first box. He put 2 crayons into the empty crayon box. Have the child do this. Ask, "How many crayons are in each box? How many crayons does Sam have in all?" Relate $1 + 2 = \underline{\quad}$ to this situation and challenge the child to complete the sentence. Then create a story about a girl who had no crayons in her first box and she put 2 crayons in another box. Challenge the child to dramatize this situation. Ask, "How many in each box? How many crayons in all?" Relate $0 + 2 = \underline{\quad}$ to this situation and guide the child in completing the sentence.

2. Repeat the procedure to develop $0 + 4 = 4$, and $3 + 0 = 3$. Discuss the 3 sentences $0 + 2 = 2$; $0 + 4 = 4$; $3 + 0 = 3$. Explain how they are alike and how they differ. Elicit the idea that when zero is one of the addends, the sum is the same as the other addend.

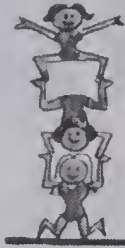
Zero in Addition

1.



$$3 + 2 = \underline{5}$$

2.



$$3 + 1 = \underline{4}$$

3.



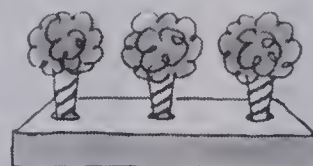
$$3 + 0 = \underline{3}$$

4.



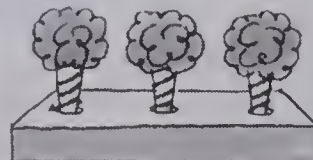
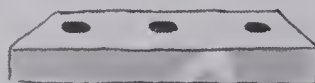
$$2 + 3 = \underline{5}$$

5.



$$1 + 3 = \underline{4}$$

6.



$$0 + 3 = \underline{3}$$

Using patterns, introducing 0 as an addend (forty-five) 45

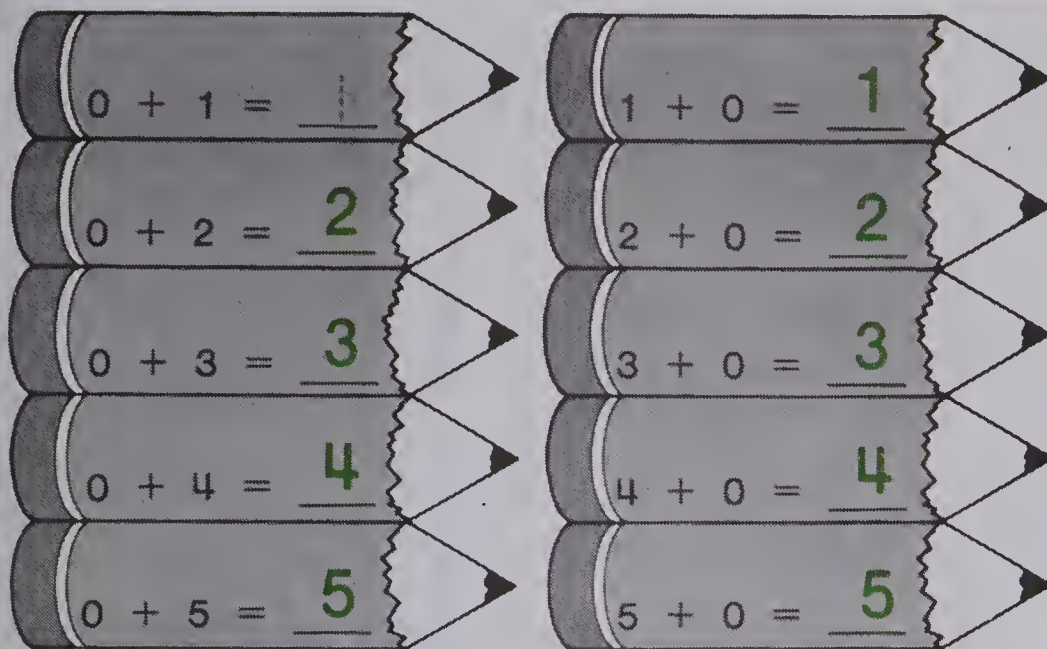
Using the Book Panel 1: Ask, "How many acrobats on the first mat on the left? (3) How many are on the second mat on the right? (2) How many in all? (5)" Read the sentence "3 plus 2 equals what?" Have the child trace the 5. Relate this to 5 acrobats in all in this picture.

Panel 2: Ask the child to look at this picture to see how many are on each mat and how many in all. Have the child read the sentence and write the sum.

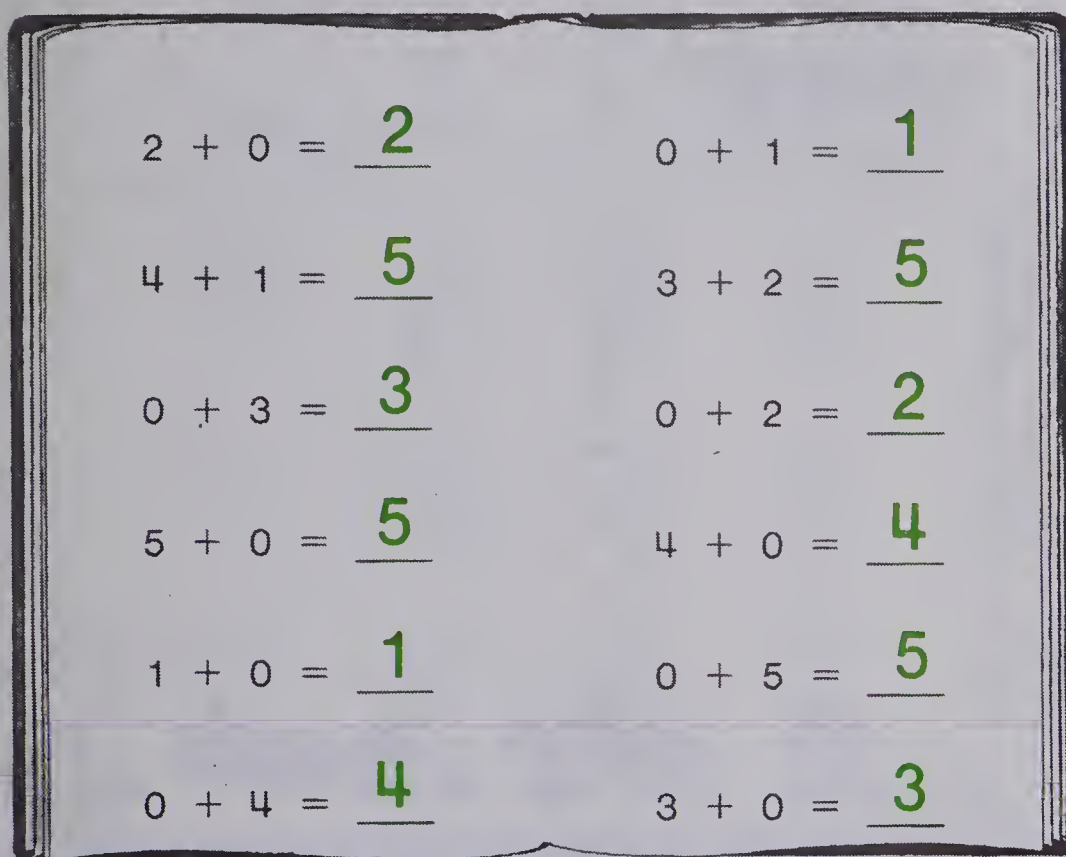
Panel 3: Ask, "How many acrobats are on the first mat? (3) How many acrobats are on the other mat? (none) What numbers are being added? (3 and 0)" Stress that 3 and 0 are called addends. Elicit the idea that when zero is one of the addends then the sum is the other addend. Then have the child read the sentence and write the sum.

Panels 4-6: In a similar way, you may guide the child in relating these addition sentences to the pictures and to writing each sum.

1.



2.



AT HOME Read these exercises. Have the child tell you the answers orally. Say, "What is 2 plus zero?" and so on.

46 (forty-six) Practice

ACTIVITIES

1. Dramatize joining no members to a set, such as 4 children at a table. Relate $4 + 0 =$ and have the child write the sum. Dramatize joining a set of 5 children to a set of no children. Relate $0 + 5 =$ and have child write the sum.

2. You may help the child write all the addition sentences with zero as an addend, including $0 + 0 =$ in the Addition Book. Then have the child make a dot picture for each and write each sum.

3. Play Stop the Magician as described in the Activity Reservoir, using addition sentences to sum 5, include zero as an addend.

4. Adapt the game Bingo in the Activity Reservoir. Use addition names for numbers, as $2 + 3$, to sum 5 to fill each cell. Give the child two small paper squares with 2 on them, four squares with 3, five squares with 4, and six squares with 5.

Using the Book Panel 1: Call attention to the addition sentences on the pencils. Point out that in each sentence zero is one of the addends. The sum in each case is the same number as the other addend. Have the child write the sum for each sentence.

Panel 2: Point out that these are vertical addition facts written in a notebook. Ask the child to write the sum for each.

OBJECTIVE

To add in vertical form

PACING

Level A	47 All (1-2 guided)
	48 All
Level B	47 All (1-2 guided)
	48 All
Level C	47 All (1 guided)
	48 All

MATERIALS

dot set cards with 5 dots or less (See Activity Reservoir.)

SUGGESTIONS

Initial Activity Using a dot card to develop the addition sentence $2 + 3 = 5$. Turn the dot card so that the groups of dots are shown vertically, and develop the addition:

$$\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$$

ACTIVITIES

1. You may provide a worksheet in vertical form, for sums 5 or less. Ask the child to draw a red dot and blue dot picture for each addend and then write the sum. Remind the child to ring how many in all.

2. Jigsaw Puzzle Cards, as described in the Activity Reservoir, may be provided for sums 5 or less in vertical form.

3. You may fold 3 sheets of paper and staple them together in the middle to make a book for each child. The child can copy these vertical additions on the first page, leaving space between examples.

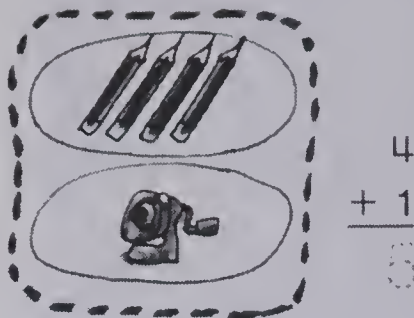
$\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline \end{array}$
$\begin{array}{r} 1 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$

Ask the child to draw red dots and blue to show each sum. Have the child ring how many in all and give each sum. This Addition Book will be completed later.

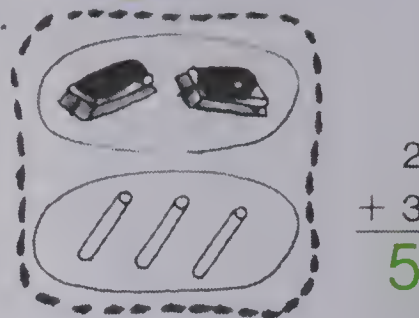
4. Jigsaw Puzzle Cards, as described in the Activity Reservoir, may be played.

Adding Another Way

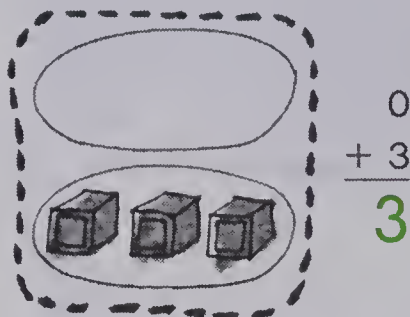
1.



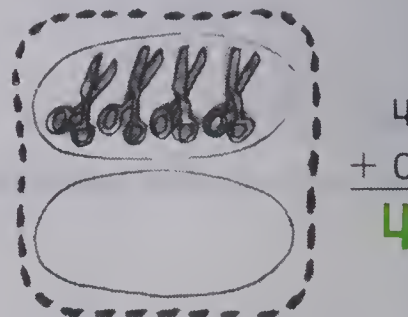
2.



3.



4.



5.

$\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ +3 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ +1 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline 5 \end{array}$
$\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$	$\begin{array}{r} 5 \\ +0 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ +0 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ +1 \\ \hline 1 \end{array}$
$\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ +2 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$

AT HOME: Read these exercises and let the child tell you the answers. Say "What is 2 plus 2?" and so on.

Using the vertical form for addition (forty-seven) 47

Using the Book Panel 1: Ask, "How many pencils in the top ring? (4)" Point out the 4 at the right. Then ask, "How many pencil sharpeners in the bottom ring? (1)" Point out the 1 at the right. Have the child trace the dotted ring to show joining. Ask, "How many pencil sharpeners in all? (5)" Have the child trace the 5. Read, "4 plus 1 is (equals) 5."

Panel 2: In a similar way, relate the addends 2 and 3 to the erasers pictured. Have the child trace the ring around both groups and tell how many in all. Read, "2 plus 3 equals what? (5)" Ask the child to write the sum (5) just below the line and read this addition as before.

Panels 3-4: Use procedures similar to panels 1 and 2. Explain to the child that we are adding the number of objects.

Panel 5: Tell the child to add.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

1.

1

+ 1

2

1

+ 2

3

1

+ 3

4

1

+ 4

5

1

+ 2

3

1

+ 3

4

2.

2

+ 2

4

3

+ 2

5

1

+ 4

5

2

+ 3

5

3

+ 1

4

4

+ 1

5

3.

1

+ 2

3

2

+ 2

4

3

+ 2

5

2

+ 1

3

2

+ 2

4

2

+ 3

5

4.

4

+ 1

5

3

+ 1

4

2

+ 1

3

1

+ 1

2

4

+ 1

5

3

+ 1

4

5.

3

+ 2

5

1

+ 2

3

1

+ 4

5

1

+ 3

4

2

+ 2

4

2

+ 3

5

6.

1

+ 3

4

2

+ 1

3

3

+ 2

5

1

+ 1

2

4

+ 1

5

7.

2

+ 1

3

2

+ 2

4

2

+ 3

5

1

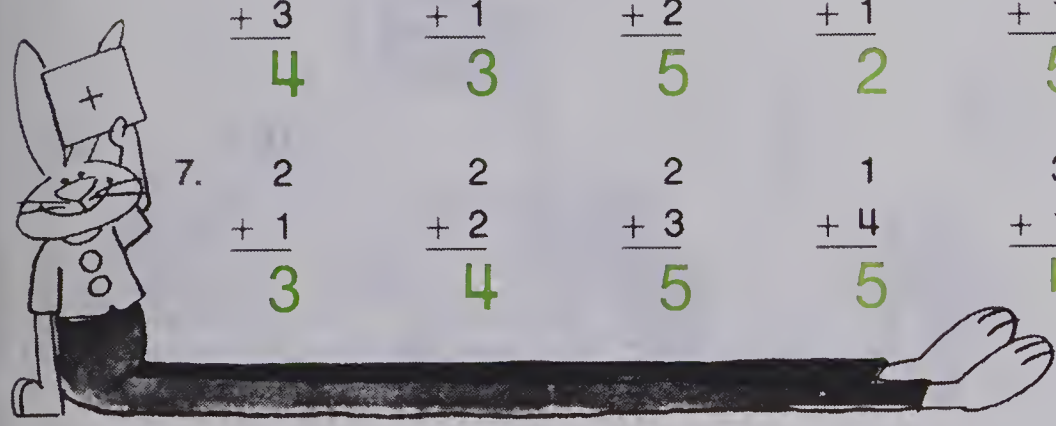
+ 4

5

3

+ 1

4



48 (forty-eight) Practice, addition facts to 5

Adapt the card game Matching the Sum as described in the Activity Reservoir. Provide cards with vertical form to sum 5. Have the child read and give each sum.

EXTRA PRACTICE

Have the child add.

1.

2

+ 1

3

3

+ 2

5

1

+ 3

4

1

+ 1

2

3

+ 1

4

2.

1

+ 2

3

4

+ 1

5

2

+ 2

4

2

+ 3

5

1

+ 4

5

3.

1

+ 1

2

1

+ 3

4

3

+ 2

5

3

+ 1

4

4

+ 1

5

ACTIVITIES

Give each child the top or bottom half of an egg carton and some beans (for example, 5 beans). Ask the students to put 2 beans in the one (top) row and 3 in the bottom row (one in each cell).

Then they can write

$$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$$

They should read this aloud so it sounds the same as 2 + 3 = 5. Ask them to put the beans in the carton another way and write the sum. Example: 1 + 4 = 5. You can get the students to write all the sentences for sum 5 in this manner. Again, you can show the students that 2 + 3 = 5 is the same as

$$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$$

by turning the carton.

Using the Book Sets 1-7. Tell the students to add and write the sum just below the line.

OBJECTIVES

To add when the order of the addends is changed

To add using the order property of addition

PACING

Level A 49 All (1-2 guided)

50 All

Level B 49 All (1-2 guided)

50 All

Level C 49 All (1 guided)

50 All

MATERIALS

construction paper, red crayon, blue crayon

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Have the child fold a piece of construction paper in half. Assist the child in placing it on the desk like this.



1. You may ask the child to draw 3 blue circles on the left side of the paper and 2 red circles on the right. Relate $3 + 2 =$ to this picture and challenge the child to find the sum. Ask the child to turn the sheet of paper around so the sets are in a different order left to right. Relate the sentence $2 + 3 =$ to this picture and have the child find the sum. Discuss how the two addition sentences are alike and how they are different. Elicit the idea that the order of the addends may be changed but the sum will be the same.

2. Use the egg carton and beans described on the previous page.

Order of Addends

1.



$$3 + 1 = \underline{\quad}$$

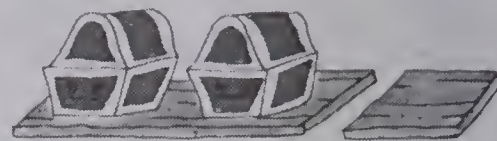


$$1 + 3 = \underline{4}$$

2.



$$0 + 2 = \underline{2}$$



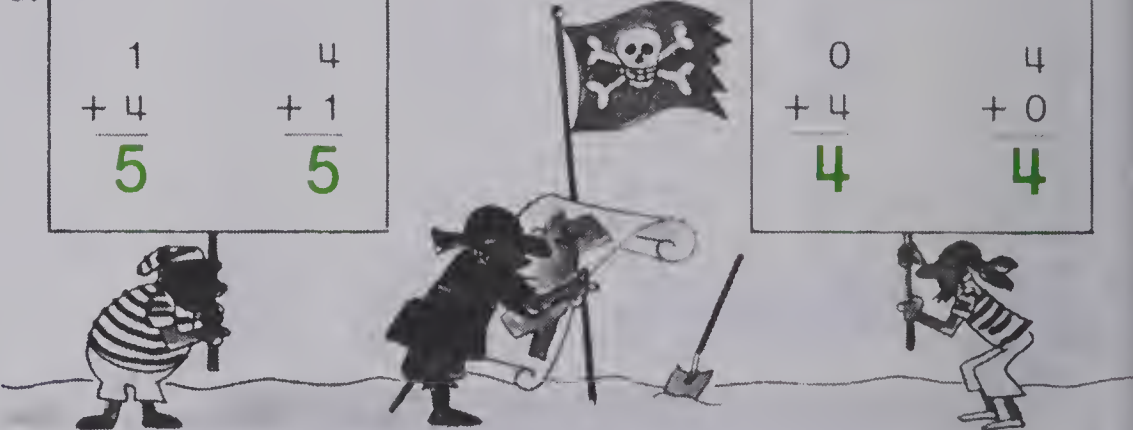
$$2 + 0 = \underline{2}$$

3.

$$\begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array} \quad \begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$$

4.

$$\begin{array}{r} 0 \\ + 4 \\ \hline 4 \end{array} \quad \begin{array}{r} 4 \\ + 0 \\ \hline 4 \end{array}$$



Changing the order of the addends (forty-nine) 49

Using the Book Panel 1: Tell the story about 3 pirates and the pirate captain. Relate the sentence $3 + 1 =$ to this and have the child complete it. Call attention to the picture at the right. Say that the pirate captain and the pirates have changed places around the tree. Relate the sentence $1 + 3 =$ to this picture and have the child complete this sentence. Elicit the idea that the order of addends is different but the sums remain the same.

Panel 2: Have the child look at the wooden raft with no treasure chests on it. Ask, "How many treasure chests on this raft? (none)" Associate zero with this set. Then ask, "How many chests are on the other raft? (2) How many treasure chests in all? (2)" Associate $0 + 2$ with the picture and have the child write the sum 2. Discuss the second picture the same way. Point out that the addends are the same but in a different order. The sum is the same.

Panels 3-4: Have the child read the additions on each sign the pirates are holding and write the sums.

$$\begin{array}{r} 1. \quad 1 \quad 0 \\ + 0 \quad + 1 \\ \hline 1 \quad 1 \end{array}$$

$$\begin{array}{r} 2. \quad 2 \quad 1 \\ + 1 \quad + 2 \\ \hline 3 \quad 3 \end{array}$$

$$\begin{array}{r} 3. \quad 4 \quad 0 \\ + 0 \quad + 4 \\ \hline 4 \quad 4 \end{array}$$

$$\begin{array}{r} 4. \quad 3 \quad 1 \\ + 1 \quad + 3 \\ \hline 4 \quad 4 \end{array}$$

$$\begin{array}{r} 5. \quad 4 \quad 2 \quad 0 \\ + 1 \quad + 2 \quad + 3 \\ \hline 5 \quad 4 \quad 3 \end{array}$$

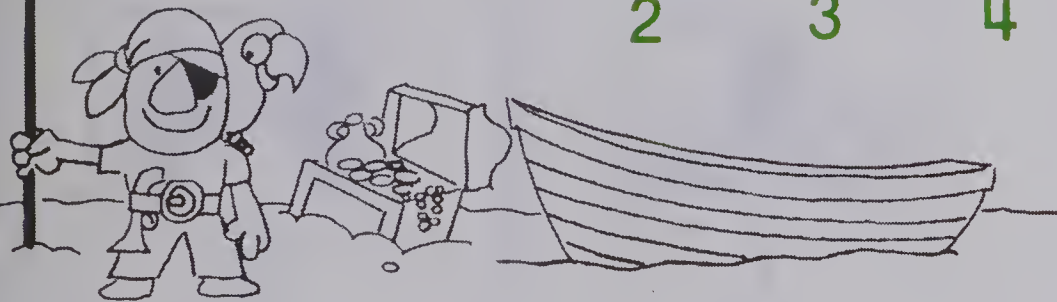
$$\begin{array}{r} 6. \quad 0 \quad 1 \quad 2 \\ + 1 \quad + 1 \quad + 1 \\ \hline 1 \quad 2 \quad 3 \end{array}$$

$$\begin{array}{r} 7. \quad 4 \quad 3 \quad 2 \\ + 0 \quad + 1 \quad + 3 \\ \hline 4 \quad 4 \quad 5 \end{array}$$

$$\begin{array}{r} 8. \quad 2 \quad 0 \quad 1 \\ + 2 \quad + 5 \quad + 2 \\ \hline 4 \quad 5 \quad 3 \end{array}$$

$$\begin{array}{r} 9. \quad 1 \quad 3 \quad 1 \\ + 3 \quad + 2 \quad + 4 \\ \hline 4 \quad 5 \quad 5 \end{array}$$

$$\begin{array}{r} 10. \quad 1 \quad 2 \quad 3 \\ + 1 \quad + 1 \quad + 1 \\ \hline 2 \quad 3 \quad 4 \end{array}$$



50 (fifty) Practice

Using the Book Panels 1-4: Guide the child in completing each pair of additions on the flags. You might check to see that once the child has determined the sum of the first example counting is not needed to solve the second example of this pair.

ACTIVITIES

1. Use Bulletin Board suggestion 3 in the Chapter Overview.

2. Matching the Sum, as described in the Activity Reservoir, may be played including addition cards with 0 addends. Use vertical addition problems.

3. The child can add $3 + 2$ and $2 + 3$ on the mini-calculator. This can reinforce that the sum is the same.

4. A worksheet (or display on the chalkboard) may be prepared as below. For each addition given, the child first writes the sum. Then the child is to write another addition using the same addends in a different order. Use all the facts that have been learned.

$$\begin{array}{r} 1 \quad 3 \quad 1 \quad 0 \quad 3 \\ +2 \quad +1 \quad +0 \quad +4 \quad +2 \\ \hline 3 \quad 4 \quad 1 \quad 4 \quad 5 \end{array}$$

$$\begin{array}{r} 2 \quad 5 \quad 1 \quad 2 \quad 0 \\ +1 \quad +0 \quad +4 \quad +0 \quad +3 \\ \hline 3 \quad 5 \quad 5 \quad 2 \quad 3 \end{array}$$

EXTRA PRACTICE

Have the child add.

$$\begin{array}{r} 1. \quad 3 \quad 1 \quad 2 \quad 1 \quad 2 \\ +1 \quad +3 \quad +2 \quad +2 \quad +1 \\ \hline 4 \quad 4 \quad 4 \quad 3 \quad 3 \end{array}$$

$$\begin{array}{r} 2. \quad 2 \quad 3 \quad 1 \quad 0 \quad 4 \\ +3 \quad +2 \quad +1 \quad +4 \quad +0 \\ \hline 5 \quad 5 \quad 2 \quad 4 \quad 4 \end{array}$$

$$\begin{array}{r} 3. \quad 0 \quad 3 \quad 0 \quad 1 \quad 4 \\ +3 \quad +0 \quad +0 \quad +4 \quad +1 \\ \hline 3 \quad 3 \quad 0 \quad 5 \quad 5 \end{array}$$

$$\begin{array}{r} 4. \quad 5 \quad 0 \quad 1 \quad 2 \quad 0 \\ +0 \quad +5 \quad +3 \quad +0 \quad +2 \\ \hline 5 \quad 5 \quad 4 \quad 2 \quad 2 \end{array}$$

OBJECTIVES

To write how many in all in a group and
how many are removed
To show how many are left (remain)

PACING

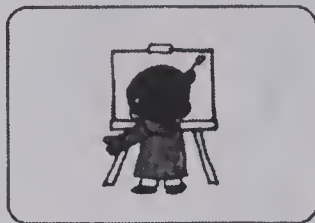
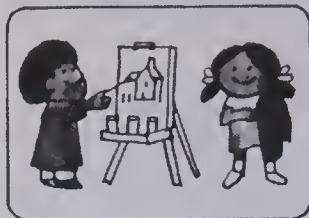
Level A 51 All (1-4 guided)
52 All (1 guided)
Level B 51 All (1-2 guided)
52 All
Level C 51 All (1-2 guided)
52 All

SUGGESTIONS

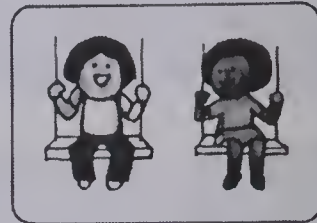
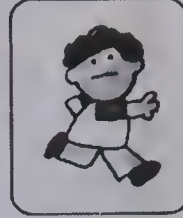
Initial Activity You may wish to dramatize the idea of separating groups by displaying three objects. Then assist the child in telling how many members there are in the group. Explain that you are going to take away two of the objects. When this is done, ask the child: "How many are left? or How many remain?" You might guide the child in creating a story to fit the procedure. Elicit the idea that you started with 3; you removed or took away 2 from the original set, and now you have 1 left.

How Many are Left?

1.



2.



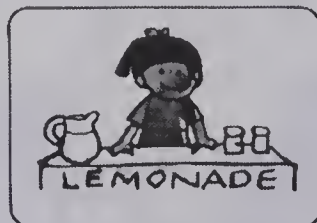
2

3.



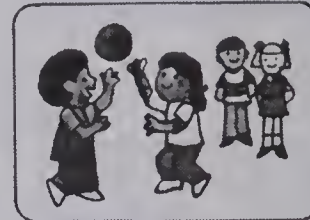
3

2



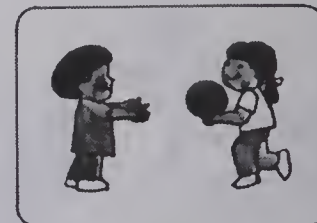
1

4.



4

2



2

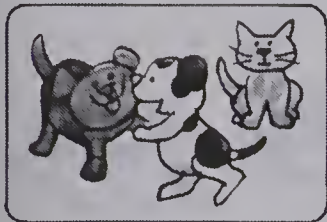
Getting ready to subtract (fifty-one) 51

Using the Book Panel 1: Ask the child to point to the group of 2 children in the first picture and trace 2. Then have the child point to the picture of the 1 girl going away and trace 1. Have the child look at the picture below. Ask, "How many are left?" Have the child trace 1. Stress that this is the same boy who is painting in the picture above.

Panel 2: Ask, "How many children are in the first picture? (3)" Have the child trace 3 below. Then ask, "How many are leaving in the next picture? (1)" Have the child trace the 1 below. Then ask, "How many remain? (2)" Have the child write 2. Explain that a group of 3, from which 1 is removed, leaves a set of 2.

Panels 3-4: Have the child write how many in all in the first picture. Then the child is to write how many are leaving and how many remain in the last picture.

1.


2

2.


4
1

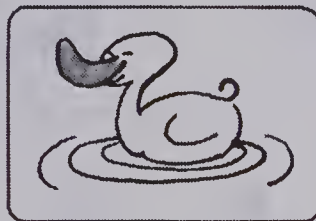
3

3.


4
2

2

4.


4
3

1

ACTIVITIES

1. To provide practice, groups of children may dramatize separating or removing members. Guide 2 children in all with 1 leaving, 3 in all with 2 leaving, and so on to 4 in all. For each dramatization ask, "How many in all? How many are leaving? How many remain?"

2. See Bulletin Board suggestion 1-b. in the Chapter Overview.

3. Give the child a piece of paper. Have the child draw 3 dots and write a 3 below. Then have the child draw an X on each of 2 dots and write a 2 after the 3. Then ask, "How many are left? (1)" Have the child write the numeral 1 below. This may be continued for 4 or less in all.

Using the Book Panel 1: Guide the child in writing how many in all in the first set. Then have the child write how many are leaving and how many remain.

Panels 2-4: Have the child continue writing how many in all, how many go away, and how many remain.

OBJECTIVES

To relate subtraction to removing part of a group
To introduce the minus sign

PACING

Level A 53 All (guided)
54 All (1 guided)
Level B 53 All (1-4 guided)
54 All
Level C 53 All (1-2 guided)
54 All

VOCABULARY

subtract, minus

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activities 1. Using 3 objects ask the child the number of members in the group and write 3 beneath it. Remove 1 object and place it to the right. Ask the child, "How many are left?" or "How many remain?" Encourage the child to tell that 1 was removed from a group of 3 and 2 are left. Relate $3 - 1$ to this and assist the child in reading 3 minus 1. Write 2 below $3 - 1$. Stress that 2 is the number we get when we subtract 1 from 3.

2. Repeat Activity 1 above to develop:

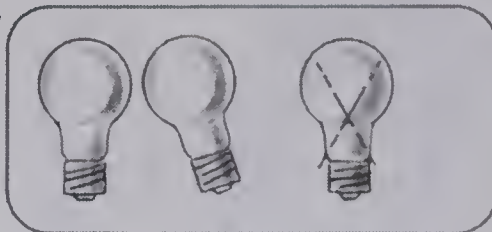
$$\begin{array}{r} 3 - 2 \\ 1 \end{array}$$

$$\begin{array}{r} 4 - 2 \\ 2 \end{array}$$

You may wish to discuss the consumer aspects of page 53. Point out the objects that use electricity, such as light bulbs, irons, lamps, and TV. Ask questions about conserving electricity such as, "Do you turn the light off when you're not in a room? Should you turn the television set off when you're not watching it?"

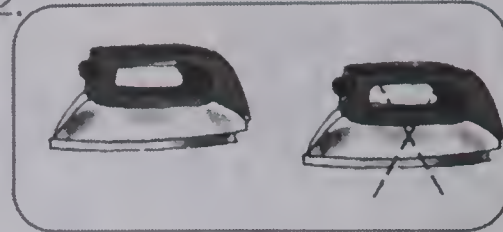
Subtraction

1.



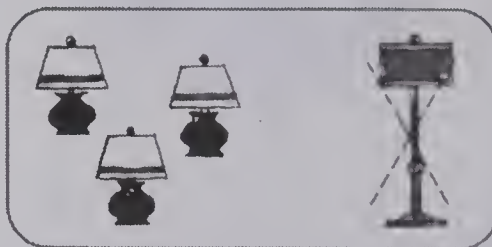
$$\begin{array}{r} - \\ \hline \end{array}$$

2.



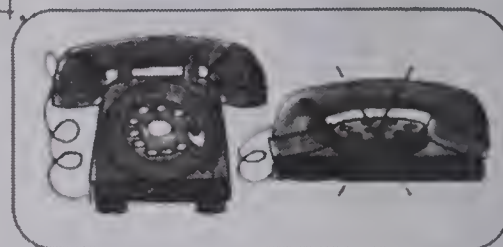
$$\begin{array}{r} - \\ \hline \end{array}$$

3.



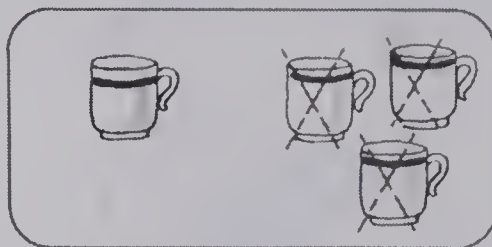
$$\begin{array}{r} - \\ \hline \end{array}$$

4.



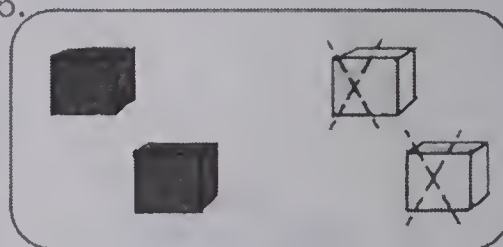
$$\begin{array}{r} - \\ \hline \end{array}$$

5.



$$\begin{array}{r} - \\ \hline \end{array}$$

6.

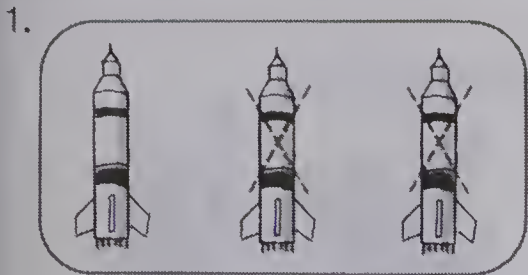


$$\begin{array}{r} - \\ \hline \end{array}$$

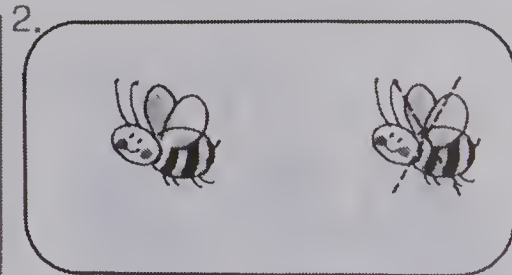
Introducing subtraction, the minus sign (fifty-three) 53

Using the Book Panel 1: Have the child tell how many light bulbs in all. (3) Tell the child to trace the 3 in front of the minus sign. Next have the child trace the X on 1 of these bulbs. Explain that this is a way to show we are removing 1 bulb. Then have the child trace over the 1. Read "3 minus 1" and explain that this means 3 subtract 1. Have the child trace the 2 below. Explain that it tells how many remain. So 2 is the number we get when we have 3 and subtract 1.

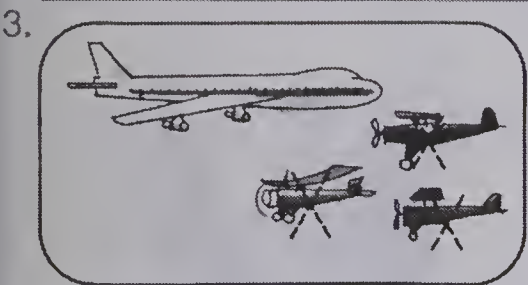
Panels 2-6: Tell the child to examine each picture and fill in the blanks. (When a dashed X or numeral is given, direct the child to trace over it.)



$$\begin{array}{r} 3 - 2 \\ \hline 1 \end{array}$$



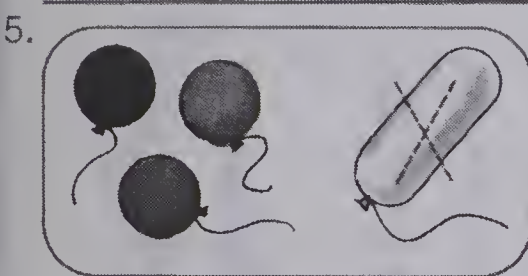
$$\begin{array}{r} 2 - 1 \\ \hline 1 \end{array}$$



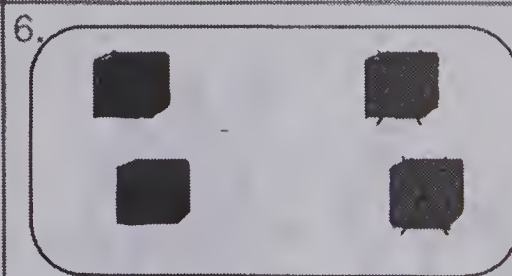
$$\begin{array}{r} 4 - 3 \\ \hline 1 \end{array}$$



$$\begin{array}{r} 3 - 1 \\ \hline 2 \end{array}$$



$$\begin{array}{r} 4 - 1 \\ \hline 3 \end{array}$$



$$\begin{array}{r} 4 - 2 \\ \hline 2 \end{array}$$

54 (fifty-four) Practice

ACTIVITIES

1. Have 4 children stand. Have 2 leave. Write $\quad - \quad$ on the chalkboard. Have the child fill in the blanks. Continue this procedure with 4 children, 3 leaving and so on for groups of 4 or less.

2. Several subtraction combinations from 4 or less, as $4 - 3$, may be written on the chalkboard. The child can draw a group of dots for how many in all and cross off the dots for the number to be subtracted. Then the child can write how many are left below.

3. Using dot cards and these numeral cards (or a worksheet), the child can enjoy this matching activity.

	$\begin{array}{r} 3-2 \\ \hline 1 \end{array}$
	$\begin{array}{r} 2-1 \\ \hline 1 \end{array}$
	$\begin{array}{r} 4-1 \\ \hline 3 \end{array}$
	$\begin{array}{r} 4-2 \\ \hline 2 \end{array}$
	$\begin{array}{r} 4-3 \\ \hline 1 \end{array}$
	$\begin{array}{r} 3-1 \\ \hline 2 \end{array}$

Using the Book Panel 1: Direct attention to $\quad - \quad$. Guide the child in writing in the first blank how many objects in all. (3) Then have the child trace the dashed X's and write in the blank, after the minus sign, how many are removed. (2) Finally ask the child to write how many remain, or the number we get when we subtract, in the blank below. (1)

Panels 2-6: Have the child look at the other pictures and fill in the blanks.

OBJECTIVES

To complete subtraction sentences for action pictures
To subtract from 4 or less

PACING

Level A 55 All (1-4 guided)
56 All
Level B 55 All (1-2 guided)
56 All
Level C 55 All (1 guided)
56 All

VOCABULARY

subtraction sentence, difference

MATERIALS

pictures of 1 apple, 3 oranges

SUGGESTIONS

Initial Activity Display a picture of 1 apple and 3 oranges. Challenge the child to tell how many fruit in all. Guide the child in removing the one apple by drawing an X on the apple. Elicit the subtraction sentence "four minus one equals three." Write $4 - 1 = 3$. Encourage the child to relate this subtraction sentence to the activity just completed. Elicit the idea that the equals sign is written between two names for the same number to make a sentence. Stress that $4 - 1$ is a name for three and the 3 is a name for three.

Subtraction Sentences

1.



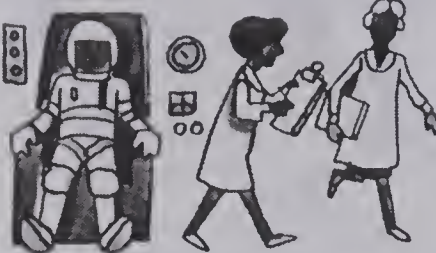
$$3 - 1 = \underline{\quad}$$

2.



$$4 - 1 = \underline{3}$$

3.



$$3 - 2 = \underline{1}$$

4.



$$2 - 1 = \underline{1}$$

5.



$$4 - 3 = \underline{1}$$

6.



$$4 - 2 = \underline{2}$$

Introducing the equals sign in subtraction (fifty-five) 55

Using the Book Panel 1: Ask, "How many in all? (3) How many are going away? (1) How many remain? (2) 3 minus 1 equals what? (2)" Have the child trace the 2 and relate it to the two women who remain. Elicit that 3 - 1 and 2 are two names for the same number. You may explain that the difference between how many in all (3) and how many go away (1) is 2, so 2 is called the difference.

Panels 2-6: For each panel, encourage the child to tell the story pictured in the panel. Assist in relating the subtraction sentence to the picture and have the child find the difference.

1.



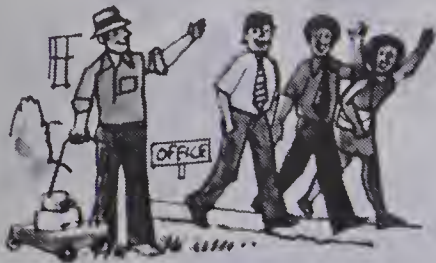
$$3 - 1 = \underline{2}$$

2.



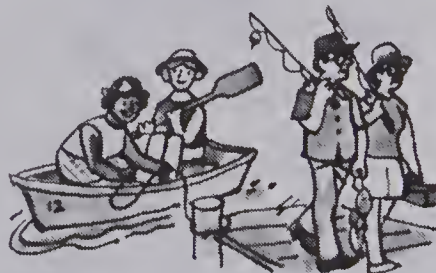
$$4 - 1 = \underline{3}$$

3.



$$4 - 3 = \underline{1}$$

4.



$$4 - 2 = \underline{2}$$

5.

$$3 - 2 = \underline{1}$$

$$4 - 1 = \underline{3}$$

$$2 - 1 = \underline{1}$$

$$4 - 3 = \underline{1}$$

$$4 - 2 = \underline{2}$$

$$3 - 1 = \underline{2}$$

56 (fifty-six) Practice

ACTIVITIES

1. Using a display board (flannel or magnetic) show how separating sets can be related to these sentences:

$$2 - 1 =$$

$$4 - 3 =$$

$$3 - 2 =$$

$$4 - 2 =$$

2. Have the child check each of the subtractions above with a mini-calculator.

3. You may fold 3 sheets of paper and staple them together in the middle to make a Subtraction Book for each child. The child can copy these subtraction sentences on the first page, leaving a three-finger space between each row.

$$2 - 1 =$$

$$3 - 2 =$$

$$4 - 1 =$$

$$4 - 2 =$$

$$3 - 1 =$$

$$4 - 3 =$$

Ask the child to draw red dots and make blue X's on the number of dots to be

subtracted, as $\begin{array}{ccc} \bullet & \bullet & \bullet \\ 3 & - & 1 = 2. \end{array}$

4. Adapt the Jigsaw Puzzle Cards in the Activity Reservoir. Use sentences for subtracting from 4 or less.

Using the Book Panel 1: Direct attention to the $3 - 1 = \underline{\quad}$. Associate the 3 with how many in all and the 1 with the woman leaving. Have the child write how many remain sitting on the blanket and read the sentence, "3 minus 1 equals 2." Explain that 2 is the difference.

Panels 2-4: Have the child look at each picture and write the difference.

Panel 5: The child is to write each difference to complete the subtraction sentences. If the child must count to find each difference, encourage making a dot picture of how many in all, and Xing out how many are to be subtracted, as

$\begin{array}{ccc} \bullet & \bullet & \bullet \\ 3 & - & 2 = \end{array}$. Then the child can write 1.

OBJECTIVE

To complete subtraction sentences for subtracting from five

PACING

- Level A All (1 guided)
- Level B All (1 guided)
- Level C All

MATERIALS

dot chart suggested on page 43, with an X on each dot to the right of the diagonal line

SUGGESTIONS

Initial Activity Using the dot chart described above, assist the child in saying the subtraction sentence that goes with each row of dots.


ACTIVITIES

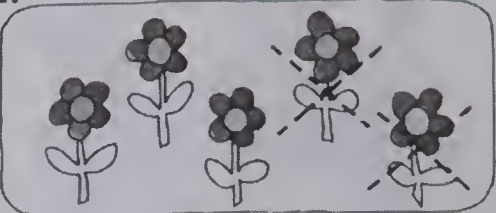
- 1. Display several subtraction sentence practice cards as $4 - 3 =$, from 5 or less. Using blocks show, for example, 4 blocks. Have the child tell how many in all. Remove 3 blocks, and have the child tell how many are left. Then the child selects the subtraction card that goes with separating the set and tells the difference.
- 2. The child can copy these on the second page in the Subtraction Book (page 56). The child is to draw dot pictures for each and write the difference.


$5 - 4 =$ $5 - 3 =$
 $5 - 1 =$ $5 - 2 =$

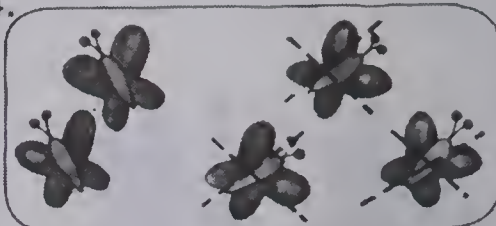
- 3. Provide the Dot Cards, as described in the Activity Reservoir, for subtracting from 5 or less. Show each card and challenge the child to write the subtraction sentence for each.

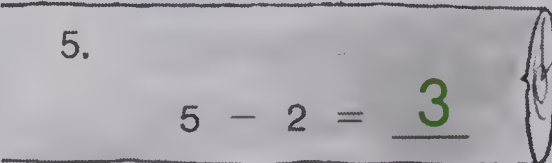
Subtracting from Five

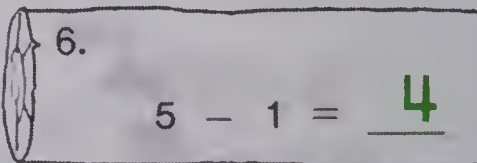
1.
 $5 - 1 =$ 4

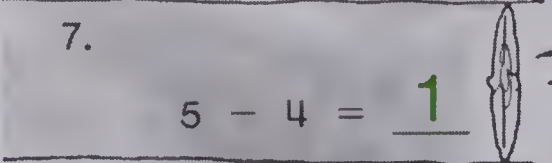
2.
 $5 - 2 =$ 3

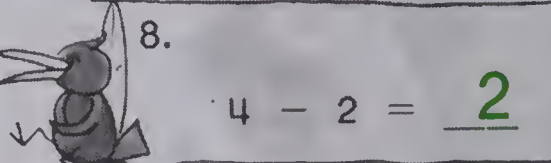
3.
 $5 - 4 =$ 1

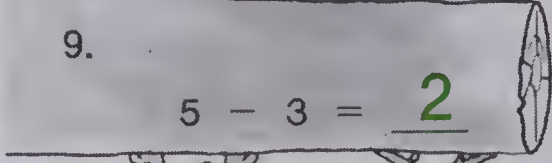
4.
 $5 - 3 =$ 2

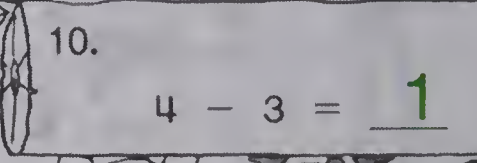
5.
 $5 - 2 =$ 3

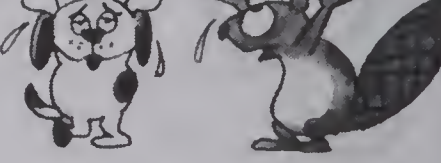
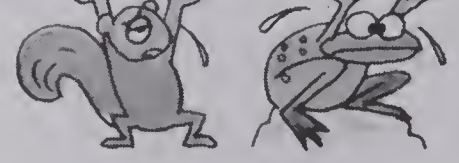
6.
 $5 - 1 =$ 4

7.
 $5 - 4 =$ 1

8.
 $4 - 2 =$ 2

9.
 $5 - 3 =$ 2

10.
 $4 - 3 =$ 1



Subtracting from 5 (fifty-seven) 57

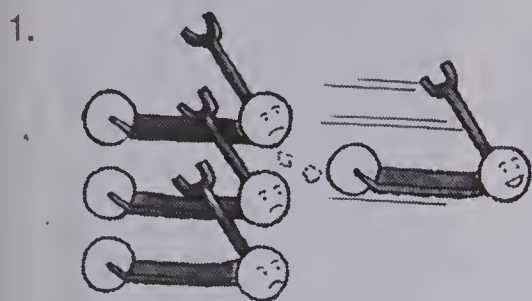
Using the Book Panel 1: Ask, “How many worms in all? (5)” Have the child trace the dashed X and ask, “How many worms are removed? (1) How many are left? (4)” Read, “5 minus 1 equals what number?” Relate this to the set picture above. Have the child trace the difference 4.

Panels 2-4: Have the child look at each picture and find the difference for each. You may have the child notice that the number which begins each sentence is 5, because there are 5 in all in each set.

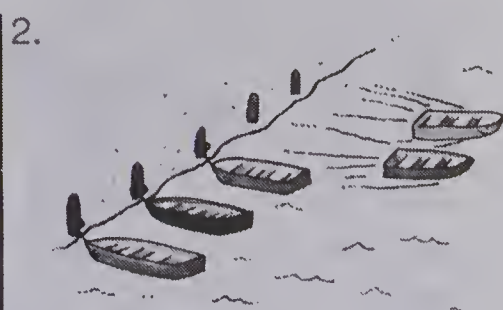
Panels 5-10: Have the child find each difference to complete the subtraction sentences. If the child must count to find each difference, encourage making a dot picture, as $\bullet \bullet \bullet \blacksquare \blacksquare =$ $5 - 2 =$. Then the child can write 3.

57

Ride With Me!



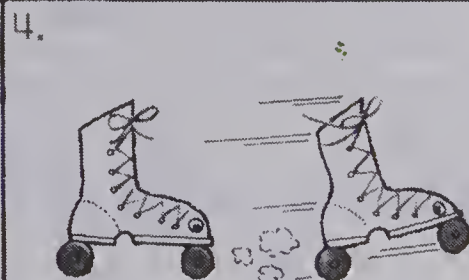
$$4 - 1 = \underline{3}$$



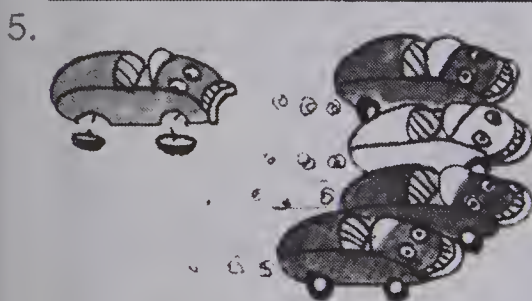
$$5 - 2 = \underline{3}$$



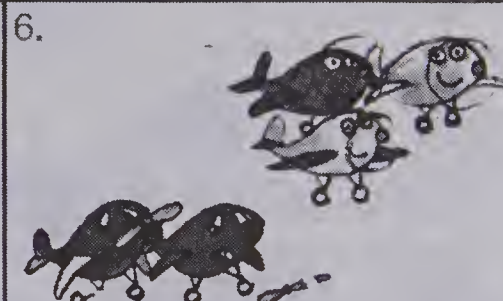
$$4 - 2 = \underline{2}$$



$$2 - 1 = \underline{1}$$



$$5 - 4 = \underline{1}$$



$$5 - 3 = \underline{2}$$

58 (fifty-eight) Using subtraction to interpret a pictured problem

OBJECTIVES

To complete subtraction sentences, subtracting from 5 or less

To solve pictured problems using subtraction

PACING

Level A All (1 guided)

Level B All (1 guided)

Level C All (1 guided)

SUGGESTIONS

Initial Activity Have the child observe a dramatization and then tell what was happening. For example, you may whisper to 3 boys and 2 girls to sit at a table reading books. Then you may whisper to the 2 girls to stand up and walk away. Ask a child to tell what happened and relate $5 - 2$ to this. Then you may ask, "How many children are left at the reading table?" The sentence $5 - 2 = \underline{\quad}$ may be written and completed by the child.

ACTIVITIES

1. Stop the Magician, in the Activity Reservoir, may be played with subtracting from 5 or less.

2. Put a subtraction sentence on the board. Have the child dramatize this sentence on the flannel board with felt pieces.

3. Matching the Difference, as described in the Activity Reservoir, may be played. The cards to be dealt will be subtraction from 5 or less, as $5 - 1$, excluding those involving zero. The matching difference cards will be 4 or less.

Using the Book You may explain that all the pictures on this page are about things we ride on.

Panel 1: Ask, "How many scooters in all? (4) How many are leaving? (1) How many remain? (3)" Have the child trace the 3 and read the sentence $4 - 1 = 3$. Explain that the difference, 3, answers the question "How many are left?"

Panels 2-6: Explain that the question for each picture is "How many are left?" Have the child look at each picture and the subtraction sentence about it. Then the child is to write the difference to answer, "How many are left?"

OBJECTIVES

To introduce zero in subtraction
To write differences when zero is subtracted or zero is the difference

PACING

Level A	59 All (guided) 60 All
Level B	59 All (1-3 guided) 60 All
Level C	59 All (1-3 guided) 60 All

MATERIALS

a crayon box, 5 crayons

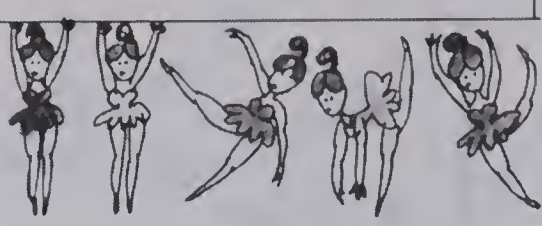
BACKGROUND

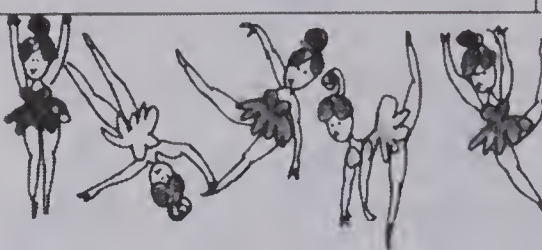
See Item 2 of the Chapter Overview Background.

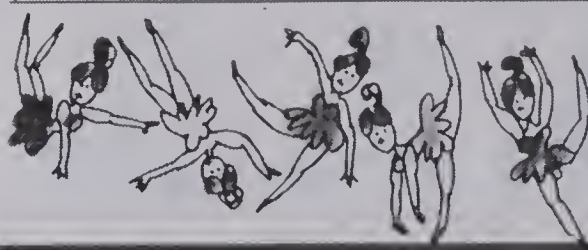
SUGGESTIONS

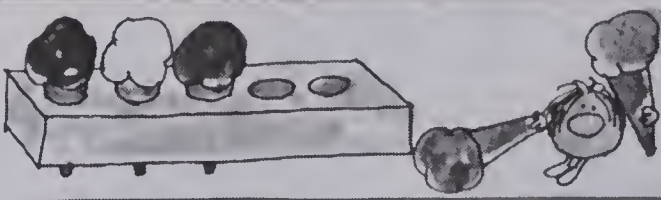
Initial Activity Display two crayons in a box, and create a story about a girl who had 2 crayons and gave them to her friend. Have the child do this. You might ask, "How many crayons are left in the box?" Relate $2 - 2 = \underline{\quad}$ to this and have the child complete the sentence. Repeat this activity for $4 - 4 = \underline{\quad}$. Stress the idea that when a number is subtracted from itself, the difference is always zero. Then display a box with 1 crayon in it. Tell the child that no crayons are being taken out. Relate $1 - 0 = \underline{\quad}$. Repeat this activity for $3 - 0 = \underline{\quad}$. Stress the idea that when we subtract zero from a number, the difference is always that number.

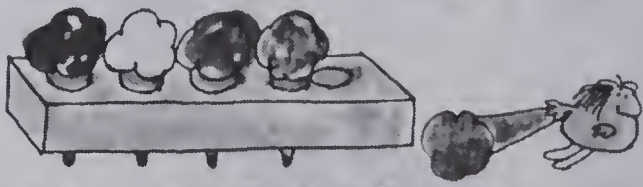
Zero In Subtraction

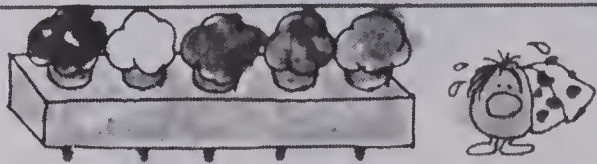
1. 
 $5 - 3 = \underline{2}$

2. 
 $5 - 4 = \underline{1}$

3. 
 $5 - 5 = \underline{0}$

4. 
 $5 - 2 = \underline{3}$

5. 
 $5 - 1 = \underline{4}$

6. 
 $5 - 0 = \underline{5}$

Using patterns, 0 in subtraction (fifty-nine) 59

Using the Book Panel 1: Ask, "How many circus performers in all? (5) How many are falling off? (3) How many are left (remain)? (2)" Read the sentence, "5 minus 3 equals what?" Have the child trace the difference 2. Relate this to 2 circus performers left (remaining) on the wire.

Panel 2: Ask the child to look at this picture to see how many there are in all and how many are falling off. Have the child read the sentence and write the difference.

Panel 3: Ask the child to look at this picture to see how many in all and how many of these are falling off. Relate $5 - 5$ and ask, "How many are left? (none)" Have the child write 0. Elicit the idea that any number minus that same number is always zero.

Panels 4-6: In a similar way, you may guide the child in relating this series of subtraction sentences to the pictures and to write each difference.

1.

$$\begin{array}{l} 1 - 0 = \underline{1} \\ 2 - 0 = \underline{2} \\ 3 - 0 = \underline{3} \\ 4 - 0 = \underline{4} \\ 5 - 0 = \underline{5} \end{array}$$

$$\begin{array}{l} 1 - 1 = \underline{0} \\ 2 - 2 = \underline{0} \\ 3 - 3 = \underline{0} \\ 4 - 4 = \underline{0} \\ 5 - 5 = \underline{0} \end{array}$$

2.

$3 - 1 = \underline{2}$	$4 - 2 = \underline{2}$
$5 - 3 = \underline{2}$	$3 - 2 = \underline{1}$
$4 - 1 = \underline{3}$	$5 - 4 = \underline{1}$
$3 - 3 = \underline{0}$	$4 - 0 = \underline{4}$
$5 - 5 = \underline{0}$	$2 - 0 = \underline{2}$
$1 - 1 = \underline{0}$	$5 - 2 = \underline{3}$

AT HOME: Read these exercises. Have the child tell you the answers. Say "What is 3 minus 1?" and so on.

60 (sixty) Practice

ACTIVITIES

1. Dramatize separating no members from a set, such as 4 children at a table and no children leave. Relate $4 - 0 =$ and have the child write the difference. Dramatize using a set at a table, such as 5 children, and have 5 children leave. Relate $5 - 5 =$ and have the child write the difference.

2. You may help the child write all the subtraction sentences involving zero from 5 and less in the Subtraction Book. Then have the child make a dot picture for each and write the difference. Include $0 - 0 =$.

3. Play Stop the Magician as described in the Activity Reservoir using subtraction from 5 or less.

4. Adapt the game Bingo as described in the Activity Reservoir. Use names for numbers to 5 ($5 - 0$) to fill each cell. Give the child six small paper squares with 0 on each, five squares with 1 on each, three with 3 on each, two with 4 on each, and one with 5 on each.

5. A mini-calculator may be used to check the winning Bingo card above.

Using the Book Panel 1: Call attention to the subtraction sentences on the picture of pink pencils. Point out that zero is the number subtracted. Elicit the idea that when zero is the number subtracted, the difference is the same as the other number. Encourage the child to write each difference using this rule. Then help the child to observe that on the purple pencils the number subtracted is the same as the other number. Ask, "What will be the difference for 1 minus 1? (0)" Encourage the child to write each difference using this rule.

Panel 2: You may comment that these are subtraction problems written in a notebook. Ask the child to write the difference for each.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To subtract in vertical form

PACING

Level A	61 All (1-2 guided) 62 All
Level B	61 All (1-2 guided) 62 All
Level C	61 All (1-2 guided) 62 All

MATERIALS

dot cards

SUGGESTIONS

Initial Activity Using a dot card, develop the subtraction sentence $5 - 3 = 2$. Turn the dot card vertically to develop:

$$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$$

ACTIVITIES

1. You may provide a worksheet for subtracting in vertical form from 5 or less. Tell the child to make red dots for how many in all, make blue X's to take away, and then write the difference.

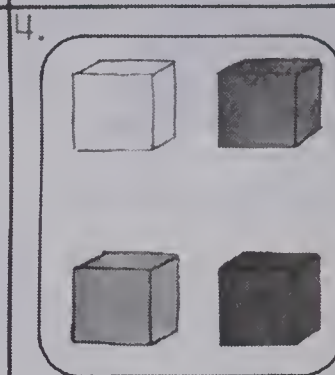
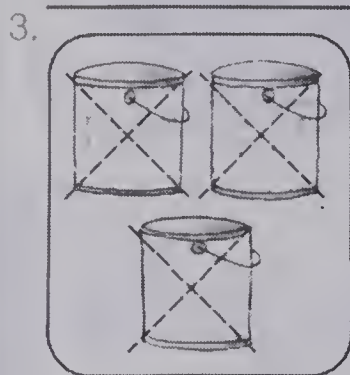
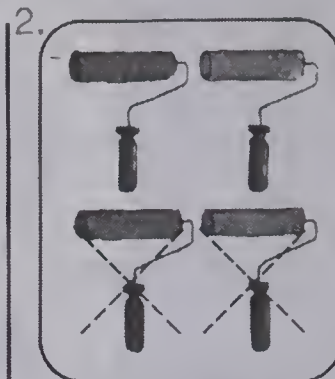
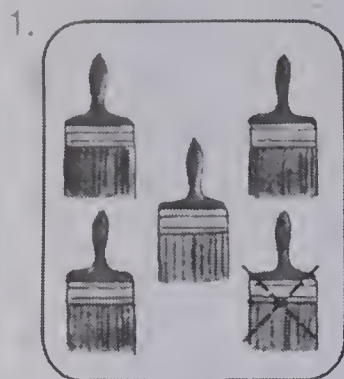
2. You may fold 3 sheets of paper and staple them together in the middle to make a Subtraction Book for each child. The child can copy these vertical subtraction problems on the first page, leaving a three finger space between each line.

$\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$
$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -4 \\ \hline \end{array}$

Ask the child to draw red dots and make blue X's on the number of dots to be subtracted.

3. Play Jigsaw Puzzle Cards, as described in the Activity Reservoir.

Subtracting Another Way



5.

$$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$$

6.

$$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$$

7.

$$\begin{array}{r} 5 \\ -2 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5 \\ -2 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$$




Using the vertical form for subtraction (sixty-one) 61

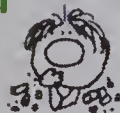
Using the Book Panel 1: Ask, "How many paint brushes? (5)" Relate the first number (5) in the subtraction to the number of paint brushes. Have the child trace the X and explain that one paint brush is being taken away. Relate the number 1 in the subtraction to the paint brush with the X. Ask, "How many brushes are left? (4)" Have the child trace the 4. Read, "5 minus 1 is (equals) 4."

Panel 2: Relate 4 to the paint rollers and have the child trace the two X's. Relate the 2 subtracted to this. Have the child look at the rollers that are left and write 2 below the line. Remind the child to read down, 4 minus 2 is (equals) 2. Tell the child that the number we get when we subtract is the difference.

Panels 3-4: Relate each subtraction to the sets pictured and have the child write each difference.

Panels 5-8: Tell the child to subtract.

1. $\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$
2. $\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$
3. $\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$
4. $\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$		$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$
5. $\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$
6. $\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$
7. $\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$



62 (sixty-two) Practice

AT HOME Read these exercises. Have the child tell you the answers. Say, "What is 5 minus 4?" and so on.

1. See Bulletin Board Suggestion 2 in the Chapter Overview.

2. The Dot Set Cards, as described in the Activity Reservoir, may each be shown vertically. Fold back the set on the bottom to show subtraction. Challenge the child to write a vertical subtraction problem for each and give the difference.

EXTRA PRACTICE

Have the child subtract.

1. $\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$
2. $\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$
3. $\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$

Using the Book Panels 1-7: Tell the child to subtract.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

Activity Have the student use the egg carton. Place 5 beans in the carton. Then take 1 away. How many are left? Write the number problem:

$$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$$

OBJECTIVE

To choose the addition sentence that fits a pictured problem

PACING

Level A All (guided)
Level B All (1-4 guided)
Level C All (1-2 guided)

MATERIALS

crayon box, 5 crayons

SUGGESTIONS

Initial Activity Dramatize the addition of $4 + 1$. Using a crayon box with 4 crayons in it, ask the child to put in 1 more crayon. Ask, "How many crayons in all?" Write 3 addition sentences on the board, one of which should be $4 + 1 = 5$. Challenge the child to select the sentence that fits the problem and relate the sentence to the situation.

ACTIVITIES

1. The Dot Cards, as described in the Activity Reservoir, may be folded back in the center to show one set at a time. Then unfold to show joining. Mix addition sentence cards for 5 or less. Have the child find a matching sentence for each.

2. Using a display board (flannel or magnetic), show joining action stories. For example, "2 birds in a tree and 3 birds fly in. How many birds in all?" Write sentences on the board, such as $2 + 1 = 3$ and $2 + 3 = 5$. Have the child decide which sentence tells about the story and explain why.

3. You may display joining action pictures, 5 or less in all. Challenge the child to write an addition sentence for each.

In the Kitchen

1.

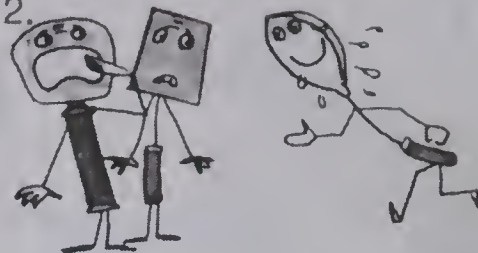


$$1 + 2 = 3$$

$$1 + 1 = 2$$

$$3 + 1 = 4$$

2.

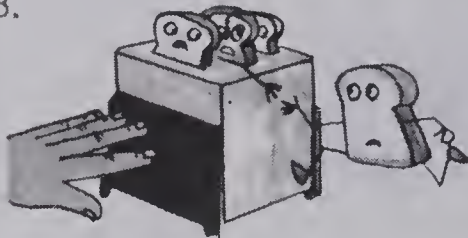


$$2 + 1 = 3$$

$$2 + 2 = 4$$

$$2 + 3 = 5$$

3.

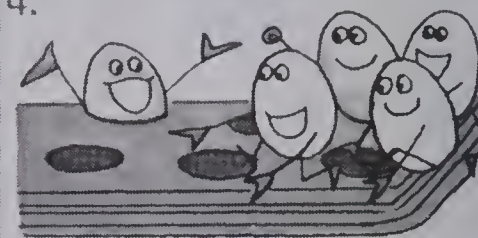


$$4 + 1 = 5$$

$$3 + 1 = 4$$

$$3 + 2 = 5$$

4.

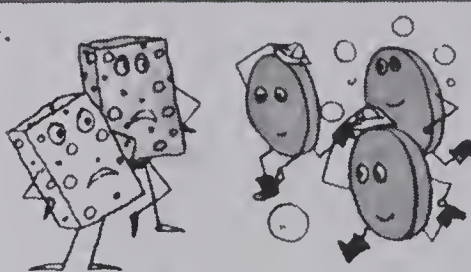


$$1 + 4 = 5$$

$$1 + 3 = 4$$

$$2 + 3 = 5$$

5.

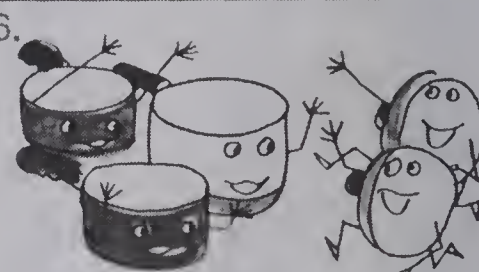


$$2 + 3 = 5$$

$$2 + 2 = 4$$

$$2 + 0 = 2$$

6.



$$3 + 1 = 4$$

$$3 + 2 = 5$$

$$2 + 2 = 4$$

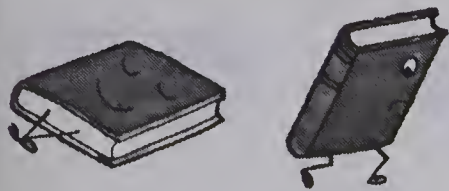
Choosing an addition sentence to go with a problem (sixty-three) 63

Using the Book Panel 1: Ask the child to point to the one milk carton. Then ask, "How many more cartons of milk are running to join the one carton? (2) How many in all? (3)" Next direct the child to look at the three sentences below and find a sentence in which 1 and 2 are added and the sum is 3. Say that $1 + 2 = 3$ is the sentence which fits or tells what is happening in the picture. Have the child trace the ring around this picture.

Panel 2: Have the child point to the 2 kitchen tools on the left. Ask, "How many are coming to join them? (1) How many in all? (3)" Direct the child to look at the three sentences below and find a sentence in which 2 and 1 are added and the sum is 3. When it is agreed that $2 + 1 = 3$ tells what is happening in this picture, ask the child to ring this sentence.

Panels 3-6: Direct the child to look at each picture to see what is happening and then circle the sentence that fits it.

Going to School



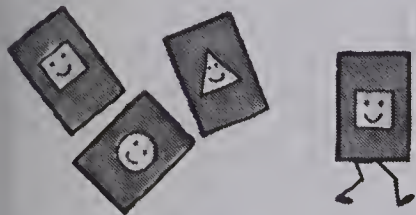
$$\begin{array}{l} 3 - 1 = 2 \\ (2 - 1 = 1) \\ 1 - 1 = 0 \end{array}$$

2.



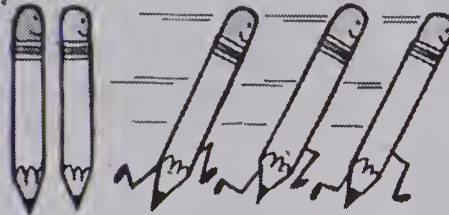
$$\begin{array}{l} (3 - 1 = 2) \\ 4 - 1 = 3 \\ 3 - 2 = 1 \end{array}$$

3.



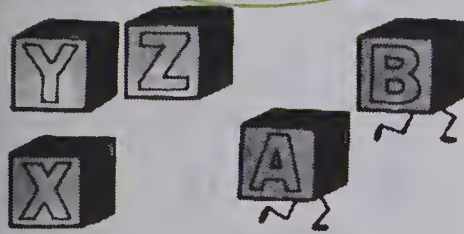
$$\begin{array}{l} 5 - 1 = 4 \\ 4 - 2 = 2 \\ (4 - 1 = 3) \end{array}$$

4.



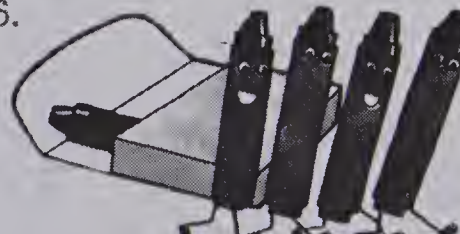
$$\begin{array}{l} (5 - 3 = 2) \\ 4 - 3 = 1 \\ 5 - 0 = 5 \end{array}$$

5.



$$\begin{array}{l} 3 - 2 = 1 \\ 4 - 2 = 2 \\ (5 - 2 = 3) \end{array}$$

6.



$$\begin{array}{l} 4 - 4 = 0 \\ (5 - 4 = 1) \\ 5 - 1 = 4 \end{array}$$

64 (sixty-four) Choosing a subtraction sentence to go with a problem

OBJECTIVE

To choose the subtraction sentence that fits a pictured problem

PACING

Level A All (guided)
Level B All (1-4 guided)
Level C All (1-2 guided)

MATERIALS

crayon box, 5 crayons

SUGGESTIONS

Initial Activity Dramatize the subtraction of $5 - 2$. Using a crayon box with 5 crayons in it, ask the child to remove 2 crayons. Ask, "How many crayons are left?" Write 3 subtraction sentences on the board, one of which should be $5 - 2 = 3$. Challenge the child to select the sentence that fits the problem and relate the sentence to the situation.

ACTIVITIES

1. The Dot Cards, as described in the Activity Reservoir, may each be shown unfolded. Then fold back the group on the right, as viewed by the child, to show subtraction. Mix subtraction sentence cards, from 5 or less. Have the child find a matching sentence for each.

2. Using a display board (flannel or magnetic), show separating action stories. For example, "5 birds in a tree, 3 fly away. How many are left?" Write sentences on the board as $2 + 3 = 5$ and $5 - 3 = 2$. Have the child decide which sentence tells about the story and explain why.

3. You may display separating action pictures, 5 or less in all. Challenge the child to write a subtraction sentence for each.

Using the Book Panel 1: Ask, "How many books in all? (2) How many are walking away? (1) How many are left? (1)" Next direct the child to look at the three sentences below to find a sentence which begins with 2, subtracts 1, and equals 1. ($2 - 1 = 1$) Have the child trace the ring around $2 - 1 = 1$.

Panel 2: Ask, "How many in all? (3) How many are running away? (1) How many are left? (2)" Direct the child to look at the three sentences below to find a sentence which begins with 3, subtracts 1, and equals 2. ($3 - 1 = 2$) Ask the child to ring this sentence.

Panels 3-6: Direct the child to look at each picture to see what is happening and then circle the sentence that fits.

OBJECTIVES

- To review and maintain the following skills:
- To add sum 5 or less, in vertical form [47]
- To subtract from 5 or less, in vertical form [61]

PACING

Level A	All
Level B	All
Level C	All

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide appropriate remedial work. The page references following the objectives are keyed to the lessons where the concept is taught.

ACTIVITIES

1. The child should enjoy playing the Bowling Game, to practice basic addition and subtraction facts for sums to 5. Prepare number facts written on "ten pins" cut from paper. Arrange the pins in the usual manner. The child's score is determined by the number of correct responses made.
2. The child might mix vertical Basic Fact Practice Cards, as described in the Activity Reservoir, and study them individually. The child might think of having an "I do know" pile to put those answered correctly. If incorrect, the child should look at each complete fact and say it three times. Then this may be placed underneath the stack to try again.
3. Play Stump the Experts. Present additions and subtractions with right and wrong answers. The child is to ring each incorrect answer. Then the child is to write the correct answer below.

Keeping Fit

1.	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ + 0 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ + 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ + 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline 3 \end{array}$
2.	$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 3 \\ + 0 \\ \hline 3 \end{array}$	$\begin{array}{r} 2 \\ + 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 1 \\ + 0 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ + 3 \\ \hline 4 \end{array}$
3.	$\begin{array}{r} 0 \\ + 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ + 0 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$
4.	$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ - 1 \\ \hline 0 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$
5.	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 2 \\ - 0 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ - 3 \\ \hline 0 \end{array}$	$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ - 2 \\ \hline 0 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$
6.	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 4 \\ \hline 0 \end{array}$	$\begin{array}{r} 3 \\ - 0 \\ \hline 3 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ - 0 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$
7.	$\begin{array}{r} 5 \\ - 0 \\ \hline 5 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 1 \\ - 0 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$

AT HOME: From time to time read some of these exercises. Have the child tell you the answers. Read addition and subtraction at different times.

Keeping Fit. Facts to 5 (sixty-five) 65

Using the Book Panels 1-3: Tell the child to add.
Panels 4-7: Tell the child to subtract.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.



1.



$$2 + 1 = \underline{3}$$

2.



$$5 - 1 = \underline{4}$$

3.

$$3 + 1 = \underline{4}$$

$$1 + 3 = \underline{4}$$

4.

$$3 + 0 = \underline{3}$$

$$0 + 4 = \underline{4}$$

5.

$$3 + 2 = \underline{5}$$

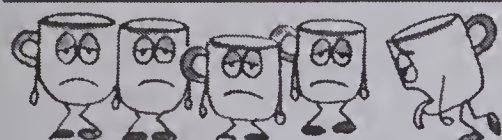
$$5 - 2 = \underline{3}$$

6.

$$2 - 2 = \underline{0}$$

$$3 - 0 = \underline{3}$$

7.



$$4 + 0 = 4$$

$$\underline{4 + 1 = 5}$$

$$0 + 5 = 5$$

8.



$$4 - 2 = 2$$

$$3 - 0 = 3$$

$$\underline{3 - 1 = 2}$$

9.

$$\begin{array}{r} 1 \\ + 1 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array} \quad \begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$$

10.

$$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array} \quad \begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array} \quad \begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$$

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A All
Level B All
Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Teach the child to study facts missed using vertical study cards as described on page 65.

2. Play the Fishing Game. Prepare cards with an addition fact on one side and a related subtraction fact on the other side for sums 5 or less. Place the cards in a container and have a child "go fishing." The child reads each side and gives the answer. If correct, the child keeps the "fish." If not, it is thrown back in.

3. The child may assist another child in studying facts missed using vertical cards. As each card is held up, this child may check the answer.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panels 1-2: Direct the child to read and complete each sentence, using the pictures above each. [pages 44 and 58 G]

Panels 3-4: Have the child find each sum. [pages 45-46 A, B]

Panel 5: Have the child complete each sentence. [page 63 D]

Panel 6: Have the child find each difference. [pages 59-60 C]

Panels 7-8: Tell the child to ring the sentence that tells what is happening in each picture. [pages 63-64 H, I]

Panel 9: Tell the child to add. [page 47 E]

Panel 10: Tell the child to subtract. [page 62 F]

CHAPTER 4 OVERVIEW

LEVEL 4

The numbers 10 through 50 are introduced in this chapter. Counting to 50 and comparing two-digit numerals are presented. The art theme for this chapter is "The Sea."

OBJECTIVES

- A To recognize groups of ten to 50
- B To complete expanded numerals
- C To read and write two-digit numerals
- D To add, in vertical form, sum 5 or less
- E To subtract, in vertical form, from 5 or less
- F To compare numbers named by two-digit numerals, each less than 50
- G To recognize and complete counting patterns by 1's, 10's, 2's, and 5's to 50
- H To choose an addition sentence or a subtraction sentence to go with a pictured problem

VOCABULARY

ten 67
expanded numerals 69
ones 69
tens 77
two-digit numerals 71
Sunday 76
Monday 76
Tuesday 76
Wednesday 76
Thursday 76
Friday 76
Saturday 76
calendar 76
twos 87
fives 89

BACKGROUND

1. Ten is the base of the standard system of writing numerals. Grouping ten members together leads to understanding ten ones = 1 ten. Then a group of 1 ten and 0 ones is represented by 10. Expanded numerals such as 2 tens + 4 ones, lead to an understanding of writing a two-digit numeral, as 24.

In counting by ones from 10 to 19, the order of the ones is the same as the order 0-9. This same order of the ones is used in ordering the 20's, 30's, and 40's.

2. Place value understanding is used in comparing two numbers. If the digits in the tens place of the numeral are different, then the numeral that has more tens shows the greater number. If the digits in the tens place are the same, then the numeral that has more ones shows the greater number.

MATERIALS

50 blocks
13 popsicle sticks
numeral cards 1-50
5 empty ten-boxes
3 coat hangers
30 clothespins
15 full ten-boxes
number chart and numeral tags for 1 through 50
(See the Activity Reservoir.)
calendar page for the month

CAREER AWARENESS

Shipping and Receiving Clerks [92]

These clerks keep track of the merchandise that is transported between businesses, customers, and suppliers. Shipping clerks take the goods from the stockroom, pack it into shipping cartons, and address the packages. They determine the cost of freight or postal rates and keep a record of how much each package weighs and costs.

Receiving clerks accept the packages and check to see if their employer's orders have been properly filled. These clerks then send the merchandise to its proper department or place in the stockroom.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that a large business depends heavily on shipping and receiving clerks. If shipments are not accurately recorded, company supplies as well as sales can be affected.

Photo description: The clerk is keeping a record of all shipments sent out and received.

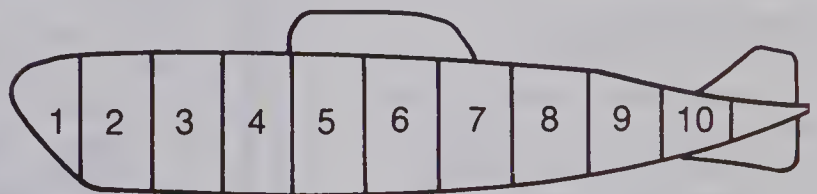
BULLETIN BOARD

1. The art theme of this chapter is "The Sea," and includes the animals that live in the sea, as well as having fun at the seashore. It should be exciting for the children to assist you in creating a bulletin board about "The Sea." You might help the children write stories about their experiences at the seashore or with their pets that live in water. Have them draw pictures to go with their stories.

2. A calendar bulletin board of the present month may be created. Make each square of the calendar large enough for the children to draw small pictures in. They might draw pictures to show the holidays, the weather or some special events that will occur. You may use this calendar to discuss the order of numbers from 1 to 30 or 31, to review the days of the week, for reading the names of the days and the month, etc.

3. Construct a Numeral Chart using a grid consisting of 10 boxes across and 10 boxes down, similar to the one on page 146. Have the children write the numerals 0 through 50 in order on the chart. (You might extend the chart to include numerals through 99 when studying Chapter 7.) This Numeral Chart may be used at this time for reviewing the order of numbers; for counting by twos, fives, or tens to 50; comparing numbers; and discovering patterns and relationships between numbers.

Since the theme of this chapter (numerals 1-50) is "The Sea" and theme of Chapter 7 (numerals 50-100) is "Transportation," you might wish to construct the following numeral chart which incorporates both these themes.



Construct 10 submarines in all. They should be placed one below the other to form a chart.

SPECIAL NOTES

The use of color on ten-boxes and single blocks is used in two ways as an aid to understanding place value. 1) In all place value lessons each color represents a different place in a numeral. For example, in 2 tens + 4 ones, 2 ten-boxes for the tens place are both one color; and 4 single blocks for the ones place are all another color. 2) In lessons on comparing numbers each number is represented by a different color. For example, in comparing 33 and 53, boxes and blocks for 33 are all one color; and boxes and blocks for 53 are all another color.

OBJECTIVES

To count to ten

To identify ten members of a group

PACING

Level A 67 All (1-2 guided)
68 All

Level B 67 All (1-2 guided)
68 All

Level C 67 All (1-2 guided)
68 All

VOCABULARY

ten

MATERIALS

10 blocks

SUGGESTIONS

Initial Activity Ask the child to show 9 blocks. Show one more block with the set of 9 and ask, "How many blocks are in the group now?" Show the word ten. Elicit that a group of ten blocks has one more block than a group of nine blocks.

ACTIVITIES

1. You might review counting to ten. Lead a discussion about things the child is familiar with that come in a group of ten, like ten fingers or ten toes. The child might enjoy and profit from reciting "Ten Little Indians," and acting it out.

2. Have the child create a book by assembling a set of ten pictures such as toys for example. Provide magazines and scissors and have the child cut out 10 objects. Then paste each one on a separate paper and label them from [1-9 and ten.] When the book is stapled together, have the child "read it" to you by counting the members in the set.

Ten

-
-
-
-
-

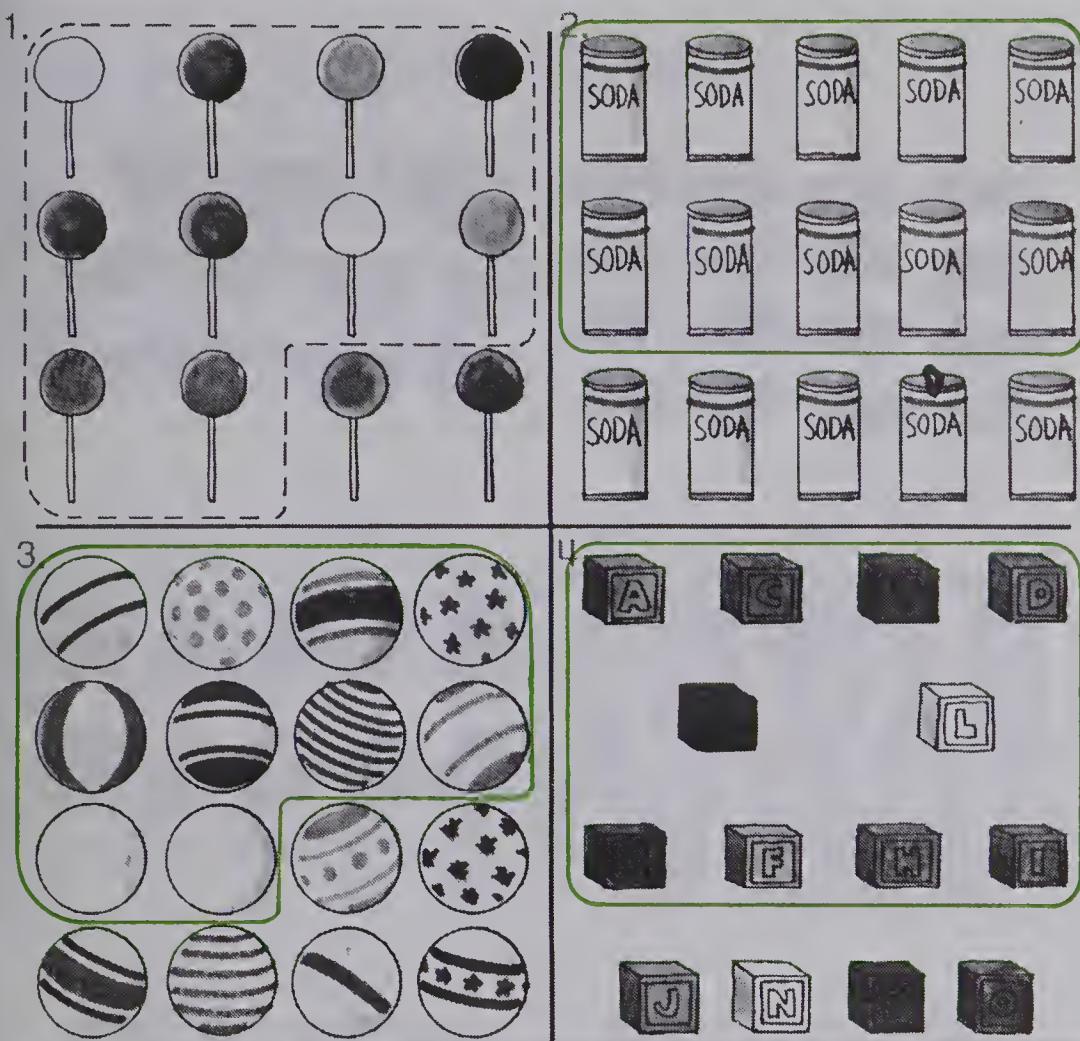
AT HOME Have the child count to 10. Then find 10 objects at home and have the child touch each object while counting to 10.

Concept of ten (sixty-seven) 67

Using the Book Panel 1: Have the child point to each fish and count the fish in the row. Introduce ten, stressing that 1 more than 9 is ten. (The numeral 10 is to be presented in a later lesson.) Then have the child count again, tracing 1, 2, and continuing to write the numerals through 9.

Panel 2: Ask the child to count how many shells are inside the dashed ring, making an X on each shell as it is counted. Then the child can trace over the ring.

Panels 3-5: The child is to count and ring ten members in each group. You may remind the child to put an X on each object as it is counted. This will help the child remember which have been counted.



Keeping Fit

5.	$\begin{array}{r} 1 \\ + 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ + 0 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$
6.	$\begin{array}{r} 5 \\ - 0 \\ \hline 5 \end{array}$	$\begin{array}{r} 3 \\ - 3 \\ \hline 0 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$

68 (sixty-eight) Practice • Keeping Fit: Addition and subtraction through sum 5

Using the Book Panel 1: The child can count how many are inside the dashed ring, placing an X on each as counted. Then the child can trace the ring.

Panels 2-4: The child is to continue drawing a ring around ten members in each set.

Panel 5: Tell the child to add.

Panel 6: Tell the child to subtract.

1. Have the child place ten objects on the table (or flannel board). Have the child place the correct word names (one, two, etc.) below the objects. Then have the child place the correct numeral below each word name. You might include the numeral 10.

2. You may provide 50 small objects of one kind (without indicating the number), such as straws, toothpicks, or strips of construction paper. Have the child count out groups of ten. Put a rubber band around each group and keep these to be used later for counting by tens.

KEEPING FIT

OBJECTIVE

To review and maintain the following skills:

To add sums 5 or less (47)

To subtract from 5 or less (61)

PACING

Level A All

Level B All

Level C All

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concept is taught.

OBJECTIVE

To name numbers by expanded numerals such as 1 ten + 3 ones

PACING

Level A	69 All (1-2 guided) 70 All
Level B	69 All (1-2 guided) 70 All
Level C	69 All (1-2 guided) 70 All

VOCABULARY

ones, expanded numerals

MATERIALS

13 popsicle sticks

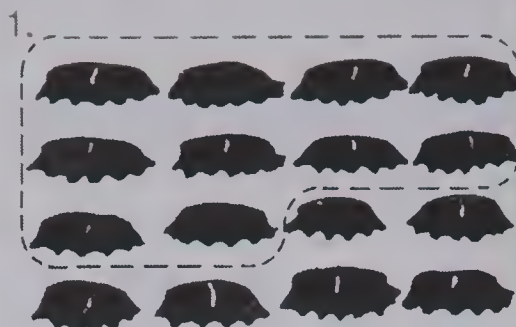
BACKGROUND

See Item 1 of the Chapter Overview Background.

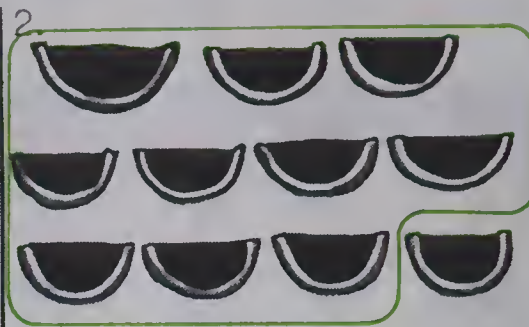
SUGGESTIONS

Initial Activity Display 13 sticks. Guide the child in counting ten sticks and telling how many extra sticks there are. Relate the expression 1 ten + 3 ones to the number of sticks in all. Have the child then remove one stick from the group of 3 ones and relate the expression 1 ten + 2 ones. Remove another stick and relate 1 ten + 1 one and still another stick to relate 1 ten + 0 ones.

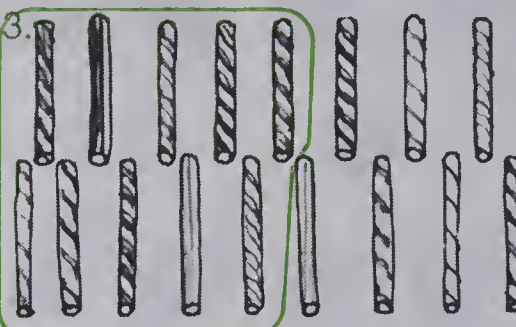
Ten and Ones



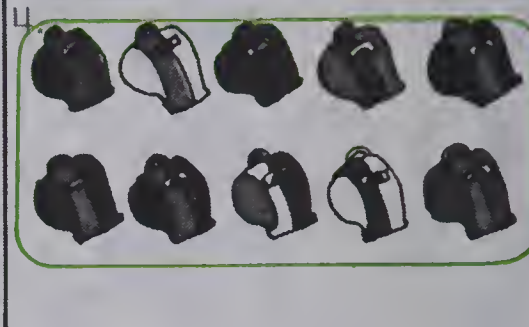
1 ten + 6 ones



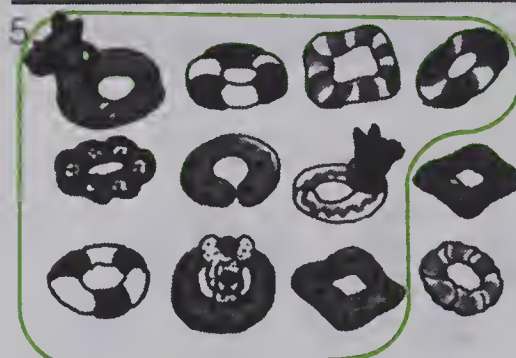
1 ten + 1 one



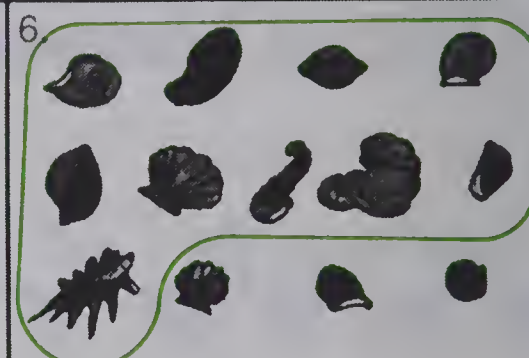
1 ten + 7 ones



1 ten + 0 ones



1 ten + 2 ones



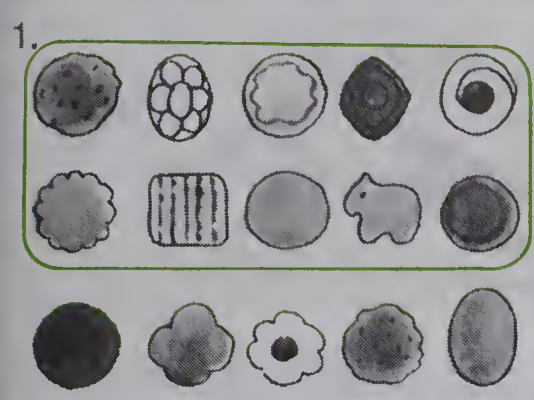
1 ten + 3 ones

Concept of expanded numerals (sixty-nine) 69

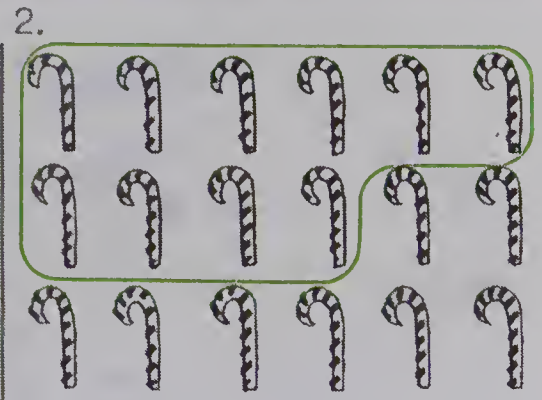
Using the book Panel 1: Have the child count ten members of the group of bottle caps in the ring. If the child has difficulty remembering which have been counted, suggest making an X on each when counted. Have the child trace over the ring. Then have the child tell how many bottle caps are outside the ring. Point out that the number of bottle caps in all is 1 ten and 6 singles, so we write 1 ten + 6 ones. Have the child trace the 1 and the 6 and say, "1 ten and 6 ones."

Panel 2: Ask the child to count ten watermelon slices and ring ten of them. Have the child write 1 in the blank before "ten." Then ask the child to see how many more than ten there are (outside the ring) and write 1 in the blank before "one."

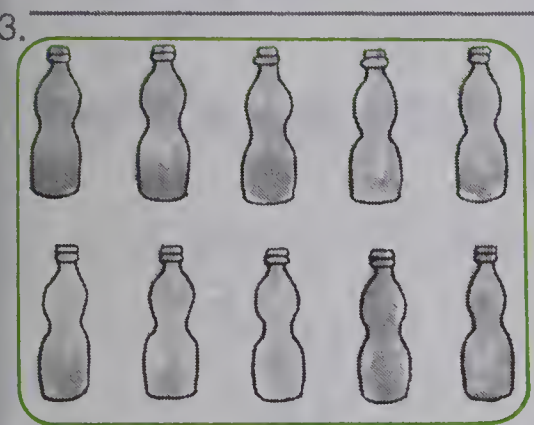
Panel 3-6: For each panel, have the child ring a group of ten members and then see how many more there are. Then have the child complete the expanded numeral to fit the picture.



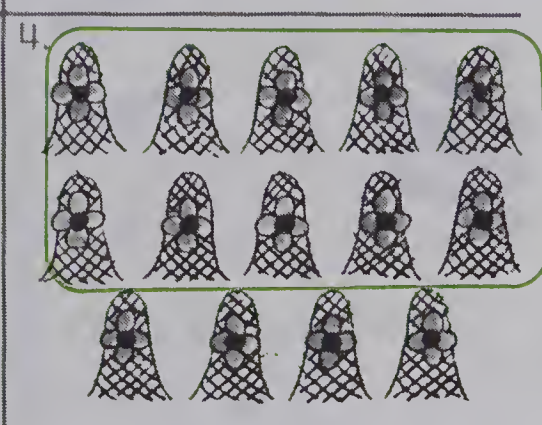
1 ten + 5 ones



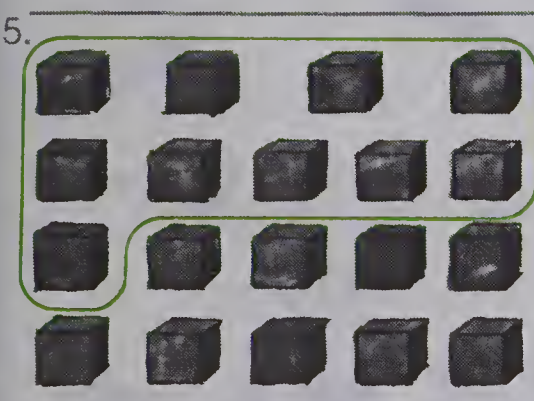
1 ten + 8 ones



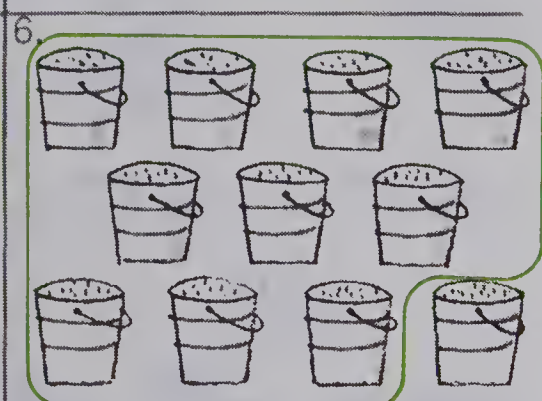
1 ten + 0 ones



1 ten + 4 ones



1 ten + 9 ones



1 ten + 1 one

70 (seventy) Practice

ACTIVITIES

1. Give the child some groups of counters such as bottle caps, construction paper discs, and soda straws. Have the child count and group ten in each group. Then have the child tell how many more are in the group.

2. Have available two groups of numeral cards for 0 through 9 and cards with the words ten, one, and ones. Display a group of 14 objects. Have the child make a group of ten and then use the cards to construct the expanded numeral for the number of objects. Repeat this activity for other numbers.

3. Show a clothes hanger with ten clothespins on it. Have another hanger that has no clothespins on it. Attach clothespins to the second hanger, as for example 6. Then have the child tell how many clothespins using expanded numeral form, as "1 ten plus 6 ones."

Using the Book Panels 1-6: For each panel, have the child ring a group of ten members and see how many more there are in the group. Then have the child complete the expanded numeral to fit the picture. It does not matter which ten the child rings.

OBJECTIVES

To write how many tens and ones in a group
To write two-digit numerals

PACING

Level A 71 All (1-3 guided)
72 All
Level B 71 All (1-2 guided)
72 All
Level C 71 All (1-2 guided)
72 All

VOCABULARY

two-digit numerals

MATERIALS

2 empty ten-boxes, 13 blocks

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display 13 blocks and an empty ten-box. Have the child count ten blocks and put them into the ten-box. Elicit the fact that the number of blocks in all is one ten plus 3 ones. Write 1 ten + 3 ones on paper and display next to the set.

Explain that there is a shorter way to name the number of blocks in the set. Write 13 below the phrase 1 ten + 3 ones. Mention that "1" and "3" are called digits. Elicit the idea that the digit on the left tells how many tens there are, and the digit on the right tells how many ones there are. Stress that the place in which we write each digit tells whether it means tens or ones. Explain that the numeral 13 has two digits so it is called a two-digit numeral.

Two-Digit Numerals

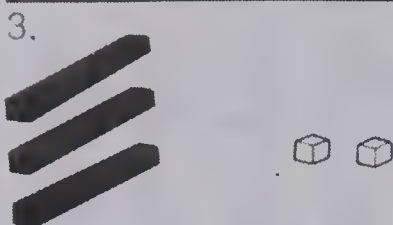


___ ten + ___ ones



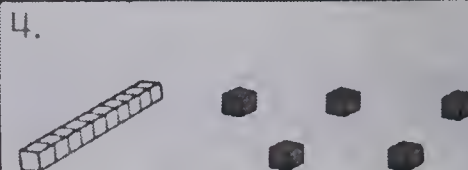
2 tens + 5 ones

25



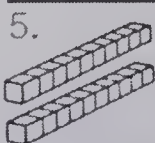
3 tens + 2 ones

32



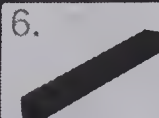
1 ten + 5 ones

15



2 tens + 0 ones

20



1 ten + 0 ones

10




Introducing place value (seventy-one) 71

Using the Book Panel 1: Ask, "How many ten-boxes? (1)" Have the child trace the 1. "How many single green blocks? (2)" Have the child trace 2. Relate 1 ten plus 2 ones to the picture. Explain that the numeral 12 below shows 1 in the tens place on the left. Have the child draw a line from "1 ten" to the numeral 1 below and trace the numeral 1. Explain that 2 is written in the ones place on the right. Have the child draw a line from "2 ones" to the numeral 2 below and trace the numeral 2. Ask, "What does 12 mean? (1 ten + 2 ones.)"


Panel 2: Ask, "How many ten-boxes?" Have the child write 2. Then ask, "How many single blue blocks?" Have the child write 5. Assist the child in writing the two-digit numeral 25 on the blank below. Explain that 2 in the tens place on the left means 2 tens and 5 in the ones place on the right means 5 ones. The child can draw lines to connect the 2's and the 5's as in panel 1.

Panels 3-6: Have the child proceed in a similar manner.

1. 

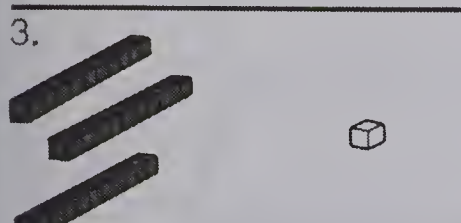
1 ten + 7 ones

17

2. 

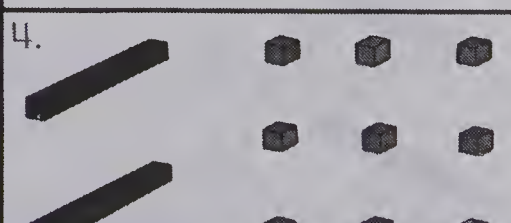
2 tens + 2 ones

22

3. 

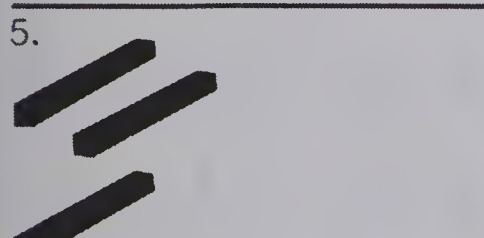
3 tens + 1 one

31

4. 

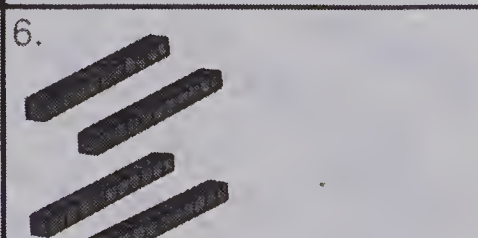
2 tens + 9 ones

29

5. 

3 tens + 0 ones

30

6. 

4 tens + 0 ones

40



72 (seventy-two) Practice

Using the Book Panel 1: Ask, "How many ten-boxes? (1)" Have the child write 1 in the first blank. Then ask, "How many single blocks in this picture? (7)" Have the child write 7 in the ones blank. Then in the blank below, guide the child to write 1 in the tens place on the left and 7 in the ones place on the right. Explain that this means 1 ten + 7 ones. It is not intended that this numeral (or any other of the standard numerals) is to be read "seventeen", at this time. Instead, only the meaning of the numeral is to be discussed. The reading of the numeral can be introduced in the next lesson.

Panels 2-6: Tell the child to look at the picture and complete the expanded numeral. Then the child is to write the two-digit numeral below it.

ACTIVITIES

1. Display cards for 1 ten + 7 ones. Challenge the child to write the two-digit numeral for this expanded numeral. Then have the child use blocks and a ten-box to show a set of 17 blocks. Repeat this activity for 2 tens + 3 ones and for 3 tens + 0 ones.

2. The child can think of 1 ten + 0 ones and show 10 on the mini-calculator. Other 2-digit numerals to 30 may be shown this way.

3. Place several expanded numeral cards for 4 tens and less, as 1 ten + 2, 2 tens + 1 one, 2 tens + 3 ones, and 3 tens + 2 ones, along the chalkboard. Give the child some mixed numeral cards, 23, 40, 12, 21. Have the child match each of these to its correct expanded numeral.

4. Play a card game with two stacks of small cards: expanded numerals for 10-30 in one stack and the two-digit numerals 10-30 in another stack. Each player may be given several expanded numeral cards and in turn draws a two-digit numeral. Each time the player gets a match, the player lays down the two matching cards. The player to discard all the cards first wins. If both children have unmatched cards, shuffle the discard pile and reuse.

5. A game may be played with two teams of children. First show your hands with fingers folded together for 1 ten and then show 4 fingers separately. Now put your hands behind you and ask, "How many did I show?" The first member of the first team may tell how many as, "1 ten + 4 ones." If the child answers correctly the team gets a point. If not, the first child of the other team tries. Continue with other combinations so each child of each team gets a turn. (You may show your hands folded twice for 2 tens + 0 ones.)

6. Display a card or write 2 tens + 3 ones. Encourage the child to draw long rectangles for ten-boxes and squares for single blocks as,



Continue with others to 3 tens + 0 ones.

OBJECTIVES

To write expanded and two-digit numerals in order from 10-20
To count from 1 to 20

PACING

- Level A 73 All (1-4 guided)
74 All
- Level B 73 All (1-3 guided)
74 All
- Level C 73 All (1-3 guided)
74 All

MATERIALS

two coat hangers, 20 clothespins

SUGGESTIONS

Initial Activity Display 2 coat hangers and 20 clothespins. Direct attention to one coat hanger and give the child the clothespins. Have the child put the clothespins onto the hanger and count one, two and so on until there are ten clothespins on the hanger. Stress that this shows 1 ten.

Display the second coat hanger to the right of this one and guide the child in putting ten clothespins on this hanger and count one ten plus one one, one ten plus two ones and so on through two tens plus zero ones. Have the child count the clothespins again using numerals 1-20.

Ten through Twenty		
1. 	<u> 1 </u> ten + <u> 0 </u> ones	10
2. 	<u> 1 </u> ten + <u> 1 </u> one	11
3. 	<u> 1 </u> ten + <u> 2 </u> ones	12
4. 	<u> 1 </u> ten + <u> 3 </u> ones	13
5. 	<u> 1 </u> ten + <u> 4 </u> ones	14
6. 	<u> 1 </u> ten + <u> 5 </u> ones	15
7. 	<u> 1 </u> ten + <u> 6 </u> ones	16
8. 	<u> 1 </u> ten + <u> 7 </u> ones	17
9. 	<u> 1 </u> ten + <u> 8 </u> ones	18
10. 	<u> 1 </u> ten + <u> 9 </u> ones	19
11. 	<u> 2 </u> tens + <u> 0 </u> ones	20

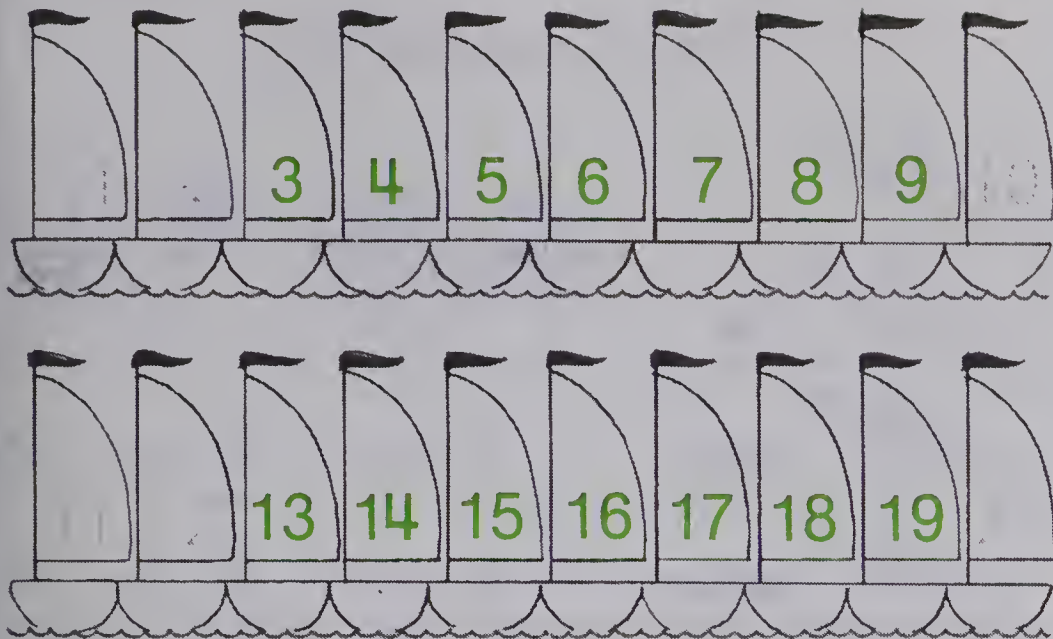
Order of numbers 10 through 20 (seventy-three) 73

Using the Book Panel 1: Ask, “How many ten-boxes? (1) How many single blocks? (0) Does 1 ten + 0 ones fit the picture? (yes)” Have the child trace the numerals. Say, “We can use only the 1 and 0 to show “1 ten + 0 ones.” Have the child trace the “10” at the right and read it aloud as ten.

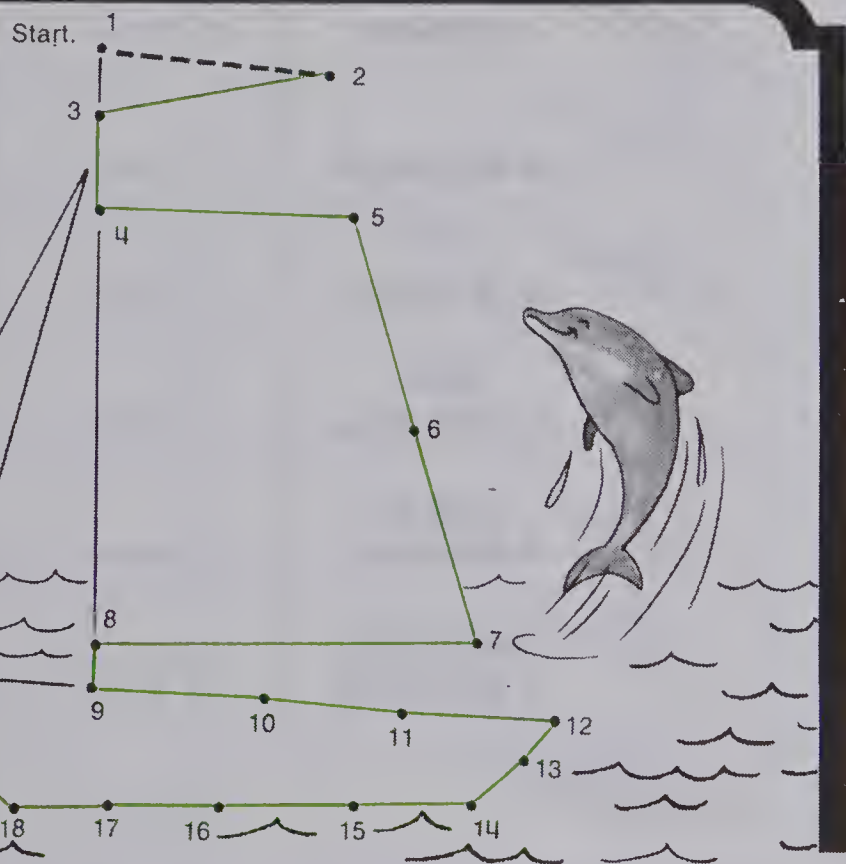
Panel 2: Follow procedures similar to panel 1. Read “eleven” aloud.

Panel 3: Have the child write how many tens and how many ones. Read the expanded numeral “1 ten plus 2 ones.” To write the two-digit numeral, guide the child to write 1 in the tens place on the left and 2 in the ones place on the right. Explain that 12 is read twelve and means 1 ten + 2 ones.

Panel 4-11: Direct the child to look at each picture, complete the expanded numeral, and write the two-digit numeral. When finished have the child observe the order of the ones. Explain that 20 is read “twenty”. Have the child practice reading the numerals 10 to 20.



Activity



74 (seventy-four) Practice • Activity: Counting to 20

ACTIVITIES

1. Display expanded numeral cards in order from 1 ten + 0 ones to 1 ten + 9 ones and 2 tens + 0 ones. Show a filled ten-box or a bundle of ten. Have the child pick up and read the matching expanded numeral card, 1 ten + 0 ones. Place one single block or stick to the right of the one ten. Have the child pick up and read this matching expanded numeral, 1 ten + 1 one. Continue placing one more single counter at a time to the right and have the child read the matching expanded numeral to 2 tens + 0 ones. Then have the child count from 1-20.

2. Adapt the game Queen's Plate as described in the Activity Reservoir. Have 2 children alternate counting to twenty. When 1 child misses the other advances a furlong.

3. Adapt the game Concentration in the Activity Reservoir. A matching pair would be 1 ten + 0 and 10.

Using the Book Top of the page: Have the child complete writing the numerals in order 1-20. Explain that the order of the ones on the first row of boats and the order of the ones on the next row are the same. Therefore, since 4 comes next after 3, 14 comes next after 13. Have the child read the numerals.

Activity: The child will enjoy drawing this dot picture, following the order 1-20. Tell the child to start at one and continue to connect the dots to twenty. The child may wish to color the picture of the sailboat.

OBJECTIVES

To write expanded and two-digit numerals in order from 20-30
To count from 1 to 30

PACING

- Level A All (1-4 guided)
- Level B All (1-3 guided)
- Level C All (1-3 guided)

MATERIALS

3 coat hangers, 30 clothespins, numeral cards 20-30

SUGGESTIONS

Initial Activity Display 2 coat hangers with 10 clothespins on each. Place an empty hanger to the right. The child can place 1 clothespin on the hanger and say 2 tens + 1 one. Display the numeral 21 and explain this is read twenty-one. Continue through 30.

ACTIVITIES

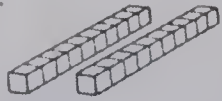
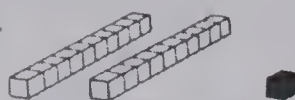
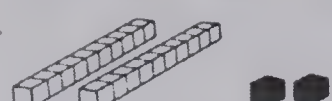








1. You may duplicate this matching exercise on a flannel board. Use yarn to connect pairs. (The chalkboard may also be used.)

- 2 tens + 0 ones 23
- 2 tens + 1 one 22
- 2 tens + 2 ones 24
- 2 tens + 3 ones 21
- 2 tens + 4 ones 20

2. See Bulletin Board suggestion 2 in the Chapter Overview.

3. I am Thinking of a Number may be played with 1 ten + 0 ones through 3 tens + 0 ones. The child who is "it" might say, "I am thinking of 2 tens + 4 ones." Another child writes or shows the numeral card for the two-digit numeral or 24 in this case. If the child is correct, that child becomes "it."

Twenty through Thirty

1. 	<u> </u> tens + <u> </u> ones	20
2. 	<u> </u> tens + <u> </u> one	21
3. 	<u> </u> tens + <u> </u> ones	22
4. 	<u> </u> tens + <u> </u> ones	23
5. 	<u> </u> tens + <u> </u> ones	24
6. 	<u> </u> tens + <u> </u> ones	25
7. 	<u> </u> tens + <u> </u> ones	26
8. 	<u> </u> tens + <u> </u> ones	27
9. 	<u> </u> tens + <u> </u> ones	28
10. 	<u> </u> tens + <u> </u> ones	29
11. 	<u> </u> tens + <u> </u> ones	30

AT HOME Let the child count aloud for you from 1 to 30

Order of numbers 20 through 30 (seventy-five) 75

Using the Book Panel 1: Ask, "How many ten-boxes? (2) How many single blocks? (0)" Have the child trace the 2 and 0 and relate 2 tens + 0 ones to the picture. Explain that this is written 20, which means 2 tens + 0 ones and is read "twenty".

Panel 2: Ask, "How many ten-boxes? (2) How many single blocks? (1)" Have the child trace the 2 and 1 and relate 2 tens + 1 one to the picture. Explain that this is written 21, which has 2 in the tens place and 1 in the ones place. Explain that 2 in the tens place is read "twenty" so 21 is read "twenty-one."

Panel 3: Have the child write how many tens and how many ones. Read the expanded numeral "2 tens plus 2 ones." To write the numeral, guide the child to write 2 in the tens place on the left and 2 in the ones place on the right. Again, stress that 2 in the tens place is read "twenty" so 22 is read "twenty-two."

Panels 4-11: Direct the child to look at each picture and complete the expanded numeral. Then the child is to write the two-digit numeral. Have the child practice reading the numerals 20 to 30.

The Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

76 (seventy-six) Using the calendar

Using the Book Top of page: Have the child trace 1 through 5. Ask, "What comes after 5?" Have the child write 6 in the next box. Tell the child to complete the calendar by writing the numerals in order.

Bottom of page: Show the child where to start and have the child make a calendar page for the present month. The child may cut out the calendar and mount it on construction paper. Then each day of the month the child can keep a weather record, drawing a picture of a cloud, raindrops, or snowflakes in each space. If the day is fair, the space can be colored blue.

This exercise can be repeated for different months of the year.

OBJECTIVES

To find the name of the month and the days of a week on a calendar
To write numerals on a calendar page

PACING

Level A All (guided)
Level B All
Level C All

VOCABULARY

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, calendar

MATERIALS

calendar page for the month

SUGGESTIONS

Initial Activity Show the calendar page for the month. Point out and read the name for the month. Then point out and read the names of the days of the week. Stress that Sunday is the first day. Have a child find the numeral 1 on the calendar and tell on what day of the week the month begins. Then ask the child to continue reading the numerals on the calendar and tell how many days are in the month. Choose other dates as the 19th. Ask the child to name the day of the week.

ACTIVITIES

1. Make a Numeral Chart as described in the Activity Reservoir. Have the child place the appropriate numerals on the hooks from 1-30.

2. Play Stop the Magician as described in the Activity Reservoir. Have 2 children alternate counting 1-30. When a child misses, start erasing the man.

3. Have the child play Concentration as described in the Activity Reservoir. Use two sets of numeral cards to make pairs (30 and 30). Limit the game to 6 or 8 pairs.

OBJECTIVE

To count by tens to fifty

PACING

- Level A 77 All (1-4 guided)
78 All (first one guided)
- Level B 77 All (1-3 guided)
78 All (first one guided)
- Level C 77 All (1-3 guided)
78 All (first one guided)


MATERIALS

15 full ten-boxes, numeral cards
for 20 through 50

SUGGESTIONS

Initial Activity Arrange ten ten-boxes in groups so that the first group contains 1 ten-box, and so on until the fifth group contains 5 ten-boxes. Have the child tell how many tens are in each group. Since the child knows the numerals 10, 20, and 30, display each of these numeral cards below the appropriate group. Then introduce the numeral 40 for 4 tens and the numeral 50 for 5 tens. Point to each group of blocks and guide the child in counting by tens from ten through fifty.

1. Counting by Tens



1 ten


2 tens

3 tens

4 tens

5 tens


2.



1 ten

10

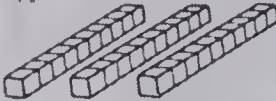
3.



2 tens

20


4.



3 tens

30


5.



4 tens

40

6.



5 tens

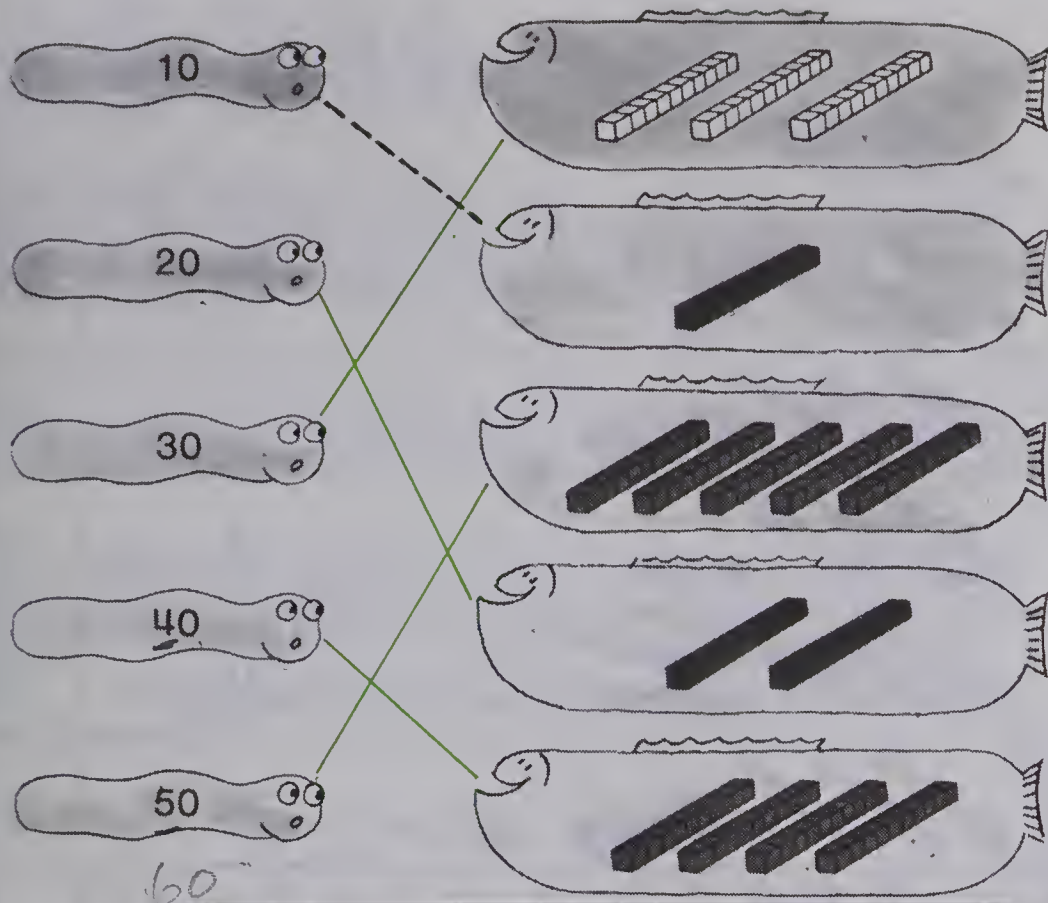
50

AT HOME. Let the child count by 10's for you from 10 to 50

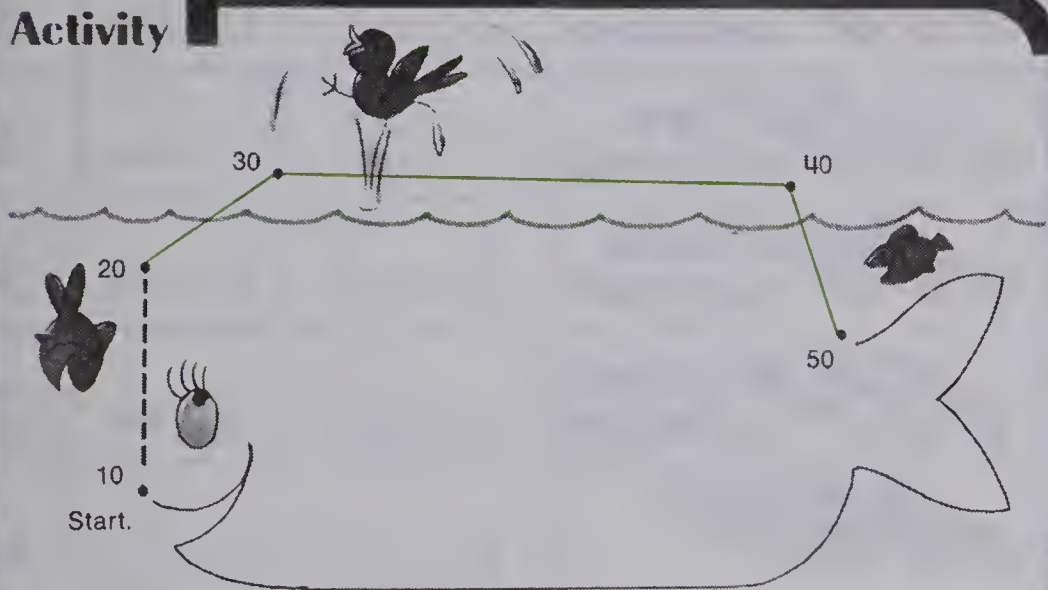
Counting by tens through 50, (seventy-seven) 77

Using the Book Panel 1: Ask, "How many toes does each boy have?" Explain that each set of boy's toes is 1 ten. Have the child trace the "1 ten" and the "2 tens." Explain that 2 tens means 2 groups of ten toes have been counted. Guide the child then to count another group of ten, so 3 tens or 3 groups of ten toes are counted. Have the child write 3 in the blank before this "tens." Continue guiding the child to count the next group of ten, writing 4 tens, and the last group of ten, writing 5 tens. Have the child trace the "10" below. Tell the child that the numeral 10 is the same as 1 ten. Have the child write the two-digit numerals for 2 tens, 3 tens, etc. Then have the child practice reading these numerals "ten, twenty, thirty, forty, fifty." Explain that the child is counting by tens.

Panels 2-6: Direct the child to look at each picture and then write how many tens and the two-digit numeral for each. Have the child read the last column down again. Say, "You are counting by tens."



Activity



78 (seventy-eight) Practice • Activity: Counting by tens (10-50)

ACTIVITIES

1. Provide experiences using blocks or dot pictures for practice in counting by tens through fifty.

2. Duplicate this on a flannel board. Use yarn for the child to match. (You may also use the chalkboard.)

1 ten	30
2 tens	40
3 tens	50
4 tens	10
5 tens	20

3. You may provide numeral cards for 10, 20, 30, 40, 50. Shuffle the cards and ask the child to place them in order from left to right, beginning with 10.

4. I am Thinking of a Number may be played. Cards for 1 ten to 5 tens may be placed on the chalkboard or table. The child who is "it" might say, "I am thinking of 3 tens." Have another child write or show the numeral card for 30. If the child is correct, the child becomes "it".

5. The child might enjoy playing the following counting game. Display a fish bowl containing 50 beads. Ask the child to guess how many beads are in the bowl. Challenge the child to count the beads by making groups of ten to see how close the guess was.

Using the Book Top of page: The child is to match each two-digit numeral with the correct ten-boxes. You may have the child trace the line from 10 to the 1 ten-box. Then guide the child to draw a line from 20 to the group of 2 ten-boxes in the fish. Direct the child to continue to match the other numerals and sets of ten-boxes.

Activity: Tell the child to connect the dots starting with the numeral 10. Have the child count by tens while connecting the dots. The child may color the picture of the whale.

OBJECTIVES

To write expanded and two-digit numerals in order from 30-40
To count from 1 to 40

PACING


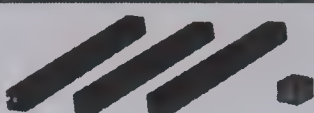


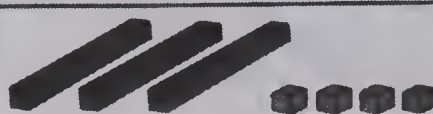
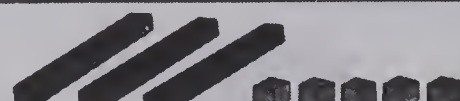



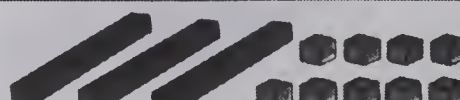
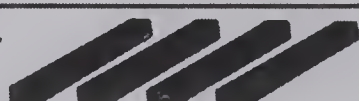
Level A 79 All (1-3 guided)
80 All
Level B 79 All (1-2 guided)
80 All
Level C 79 All (1-2 guided)
80 All

MATERIALS

numeral cards for 1 through 40,
4 empty ten-boxes, 40 blocks

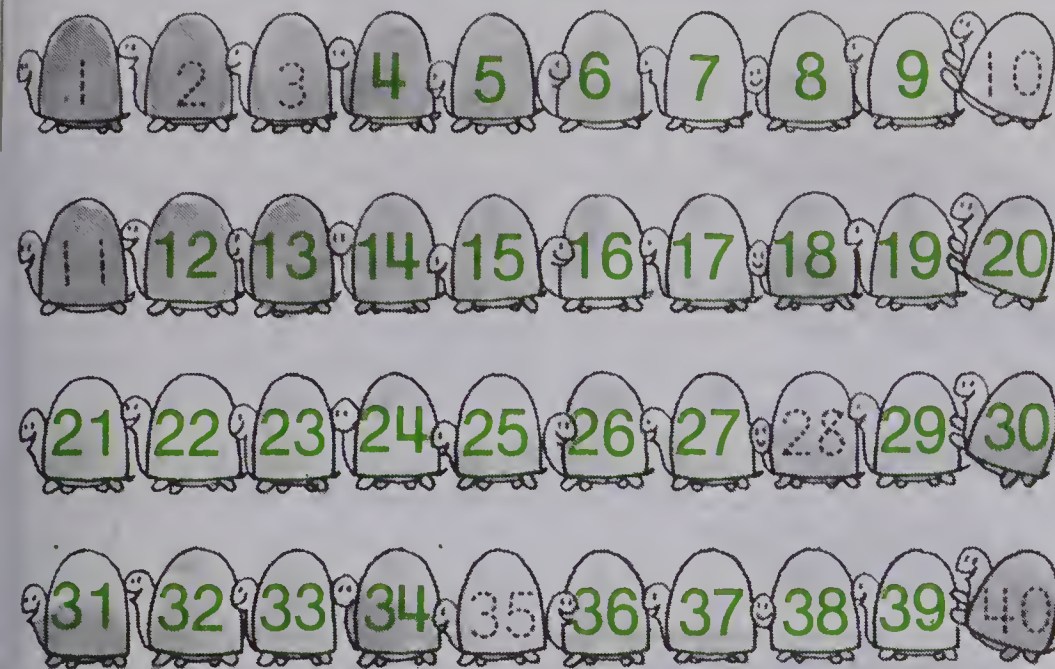
SUGGESTIONS

Initial Activity Display 3 full ten-boxes. Place an empty ten-box to the right of them. Guide the child in placing 1 block in the ten-box and saying three tens plus one one. Display the numeral card for 31 and explain that we read this as thirty-one. Continue in this way through 3 tens + 9 ones or 39. Point out that the order of the ones is the same: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Place one more block in the ten-box to make a ten.
Explain that we now have 4 tens + 0 ones or 40 blocks. Display the numeral card for 40 and have the child say forty.

Thirty through Forty		
1. 	<u> </u> tens + <u> </u> ones	30
2. 	<u> </u> tens + <u> </u> one	31
3. 	<u> </u> tens + <u> </u> ones	32
4. 	<u> </u> tens + <u> </u> ones	33
5. 	<u> </u> tens + <u> </u> ones	34
6. 	<u> </u> tens + <u> </u> ones	35
7. 	<u> </u> tens + <u> </u> ones	36
8. 	<u> </u> tens + <u> </u> ones	37
9. 	<u> </u> tens + <u> </u> ones	38
10. 	<u> </u> tens + <u> </u> ones	39
11. 	<u> </u> tens + <u> </u> ones	40

Order of numbers 30 through 40 (seventy-nine) 79

Using the Book Panel 1: Ask, “How many red ten-boxes? (3) Any single blocks? (no)” Have the child trace the 3 and 0 and relate 3 tens + 0 ones to the picture. Explain that the numeral 30 is written with 3 in the tens place on the left and 0 in the ones place on the right and it is read “thirty.”
Panel 2: Ask, “How many ten-boxes? (3) How many single blocks? (1)” Have the child complete the expanded numeral and read “3 tens plus 1 one.” Guide the child to write the two-digit numeral with 3 in the tens place on the left and 1 in the ones place on the right. Explain that 3 in the tens place is read “thirty” so 31 is read “thirty-one.”
Panels 3-11: Direct the child to look at each picture and complete the expanded numeral. Then the child is to write the two-digit numeral. Have the child practice reading the numerals 30 to 40.



Activity



80 (eighty) Practice • Activity: Ordering 30 through 41

Using the Book Top of page: Tell the child to write the numerals in order 1 through 40. Emphasize that the order of the ones in each row will be the same as the ones written on the first row of turtles. Therefore, since 7 comes after 6, 17 comes after 16, 27 comes after 26, and 37 comes after 36.

Activity: You may explain that some page numbers are missing on these books. The page numbers are below. The child can cut out the strip of numerals and then cut the strip into squares. Tell the child to place them in order on the book pages above. These may be glued on when in the correct order. If these pages have not been torn from the child's mathematics book, you may suggest finding these pages in the book to see what was learned on each.

ACTIVITIES

1. You may draw the picture of a tall ladder with 20 rungs on a big chart or the chalkboard. Write the numerals 1 to 20, each on the left side of the rungs going up. Then continue with 21 to 40 coming down. Two teams of any number of children on each may play. To play the game each child on a team in turn reads the next numeral to get up and down the ladder.

2. I am Thinking of a Number may be played. You may place expanded numeral cards, in mixed order, on the chalkboard or a table. The child who is "it" may choose a card, as 3 tens + 2 ones, and say, "I am thinking of 3 tens + 2 ones." Another child can write 32 and read "thirty-two." If the child is correct, that child becomes "it."

3. The card game described in the Additional Activity on page 72 may be played. Include expanded numerals for 1 ten + 0 ones to 4 tens + 0 ones and the two-digit numerals 10 to 40.

4. The child might enjoy creating dot pictures for practicing the order of numbers from 1 to 40.

OBJECTIVES

To write expanded and two-digit numerals in order from 40-50
To count from 1 to 50

PACING

Level A 81 All (1-3 guided)
82 All
Level B 81 All (1-2 guided)
82 All
Level C 81 All (1-2 guided)
82 All

MATERIALS

numeral cards for 40 through 50,
5 empty ten-boxes, 50 blocks

SUGGESTIONS

Initial Activity Display 4 full ten-boxes. Place the empty ten-box to the right of them. Guide the child in placing 1 block in the ten-box and saying 4 tens + 1 one. Display the numeral card for 41 and explain that we read this as forty-one. Continue in this way through 4 tens + 9 ones or 49. Point out that the order of the ones is the same: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Place one more block in the ten-box to make a ten. Explain that we now have 5 tens + 0 ones or 50 blocks. Display the numeral card for 50 and have the child say fifty.

Forty through Fifty

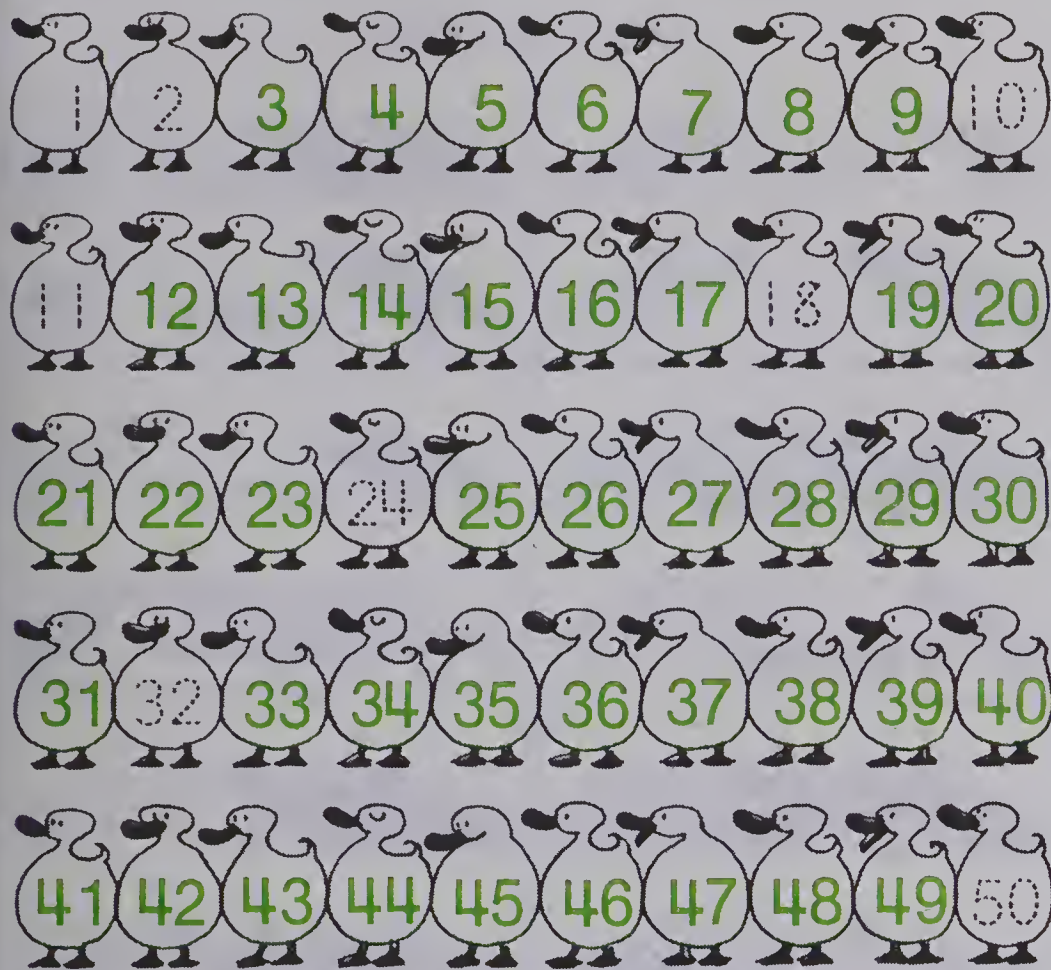
1.		<u>4</u> tens + <u>0</u> ones	40
2.		<u>4</u> tens + <u>1</u> one	41
3.		<u>4</u> tens + <u>2</u> ones	42
4.		<u>4</u> tens + <u>3</u> ones	43
5.		<u>4</u> tens + <u>4</u> ones	44
6.		<u>4</u> tens + <u>5</u> ones	45
7.		<u>4</u> tens + <u>6</u> ones	46
8.		<u>4</u> tens + <u>7</u> ones	47
9.		<u>4</u> tens + <u>8</u> ones	48
10.		<u>4</u> tens + <u>9</u> ones	49
11.		<u>5</u> tens + <u>0</u> ones	50

Order of numbers 40 through 50 (eighty-one) 81

Using the Book Panel 1: Ask, "How many green ten-boxes? (4) Any single blocks? (no)" Have the child trace the 4 and 0 and relate 4 tens + 0 ones to the picture. Explain that the numeral 40 is written with 4 in tens place on the left and 0 in ones place on the right and is read "forty".

Panel 2: Ask, "How many ten-boxes? (4) How many single blocks? (1)" Have the child complete the expanded numeral and read "4 tens plus 1 one." Guide the child to write the two-digit numeral with 4 in tens place and 1 in ones place. Explain that 4 in the tens place is read "forty" so 41 is read "forty-one."

Panels 3-11: Direct the child to look at each picture and complete the expanded numeral. Then have the child write the two-digit numeral. Have the child practice reading the numerals 40 to 50.



Activity

10 f	20 i	30 f	40 t	50 y
---------	---------	---------	---------	---------

40 t	20 i	50 y	30 f
---------	---------	---------	---------

82 (eighty-two) Practice • Activity: Ordering by tens (10-50)

ACTIVITIES

1. The ladder described on page 80 may be extended to include numbers to 50. A ladder with 25 rungs may be drawn with the numerals 1 to 25 going up on the left and 26 to 50 coming down on the right.

2. The game Stop the Magician, as described in the Activity Reservoir, may be played. Have 2 children alternate counting to 50. When a child misses, start to erase the body.

3. Have the child use the Numeral Chart as described in the Activity Reservoir to place the numerals 1-50 appropriately.

4. The child might enjoy creating dot pictures for practicing the order of numbers 30 to 50.

5. See Bulletin Board suggestion 3 in the Chapter Overview.

6. Adapt the game Bingo as described in the Activity Reservoir. Place expanded numerals in the cells and call out the two-digit numeral.

Using the Book Top of page: Tell the child to write the numerals 1 through 50 in order. Point out that the order of the ones is the same in each row. Therefore, since 8 comes after 7, 18 comes after 17, 28 comes after 27, 38 comes after 37, and 48 comes after 47.

Activity: The child is to cut the numeral squares from the bottom of the page. These are to be placed in order by tens in the squares above to discover a word. (fifty)

OBJECTIVES

To write two-digit numerals
To compare tens and show which of two numbers is greater

PACING

Level A All (1-4, 7 guided)
Level B All (1-3, 7 guided)
Level C All (1-2, 7 guided)

MATERIALS

3 ten-boxes, 6 blocks

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display a set of 13 blocks and a set of 23 blocks. Have the child write the appropriate two-digit numeral for each. Encourage the child to ring the numeral that names the greater number. Stress that we always compare the digits in the tens place first. Since 2 tens is greater than 1 ten, then 23 is greater than 13.

ACTIVITIES

1. You may display two groups of ten-boxes and single ones at a time, such as a group for 2 tens and 3 ones and another group for 3 tens and 3 ones. (Have less than 5 tens and keep the ones the same for each pair.) Have the child tell the number of each group and tell which number is greater.

2. Adapt the game Battle as described in the Activity Reservoir. Make cards with the tens different (5 or less) and the ones the same as for 24 and 44.

3. Call out a two-digit number. Challenge the child to write all the two-digit numerals with the same ones digit but the tens will be greater.

Greater Than

<p>1.</p>	<p>2.</p> <div style="text-align: right; font-size: 2em; border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">31</div> <div style="text-align: right; font-size: 2em; border-bottom: 1px solid green; width: 40px; margin: 0 auto;">24</div>
<p>3.</p> <div style="text-align: right; font-size: 2em; border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">33</div> <div style="text-align: right; font-size: 2em; border-bottom: 1px solid green; width: 40px; margin: 0 auto;">15</div>	<p>4.</p> <div style="text-align: right; font-size: 2em; border-bottom: 1px solid green; width: 40px; margin: 0 auto;">20</div> <div style="text-align: right; font-size: 2em; border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">40</div>
<p>5.</p> <div style="text-align: right; font-size: 2em; border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">32</div> <div style="text-align: right; font-size: 2em; border-bottom: 1px solid green; width: 40px; margin: 0 auto;">22</div>	<p>6.</p> <div style="text-align: right; font-size: 2em; border-bottom: 1px solid green; width: 40px; margin: 0 auto;">31</div> <div style="text-align: right; font-size: 2em; border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">40</div>
<p>7.</p>	<p>8.</p>
<p>9.</p>	

Comparing tens through 50, is greater than (eighty-three) 83

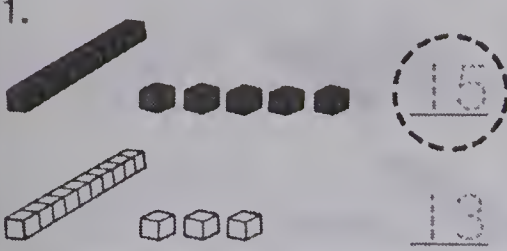

Using the Book Panel 1: Guide the child to associate 10 with the yellow ten-box and trace the numeral. Then ask, "How many blue ten-boxes? (2)" Associate 20 with 2 tens. Have the child trace the numeral and identify which set of blocks is more. Say, "The number 20 is greater than the number 10." Trace the ring around 20.


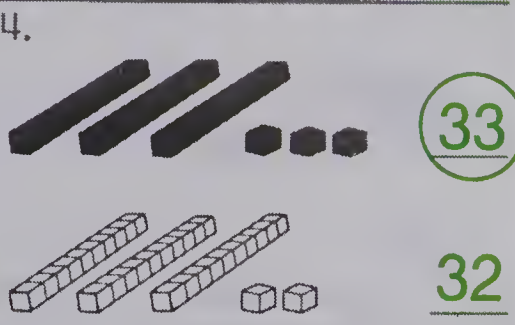
Panel 2: Ask, "How many green ten-boxes? (3) How many green blocks? (1)" Tell the child to write 31 for 3 tens and 1. Then ask, "How many red ten-boxes? (2) How many red blocks? (4)" Tell the child to write 24 for 2 tens and 4. Elicit that the group of green blocks is more, so 31 is greater than 24. Have the child draw a ring around 31.

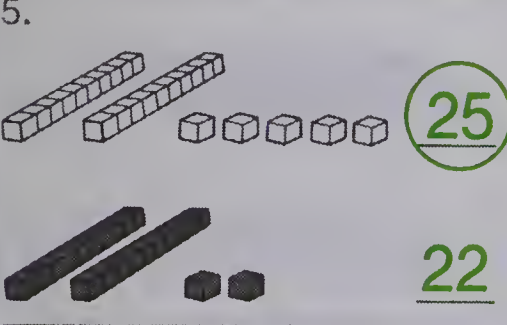

Panels 3-6: Direct the child to look at the picture and write the two-digit numeral for each group. Then the child is to ring the numeral for the number that is greater.

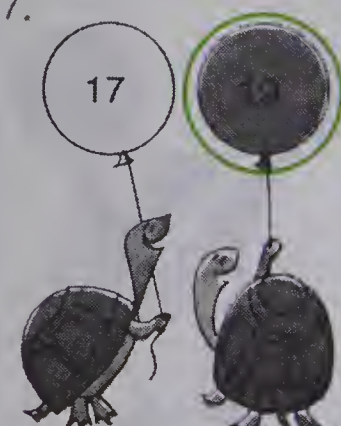
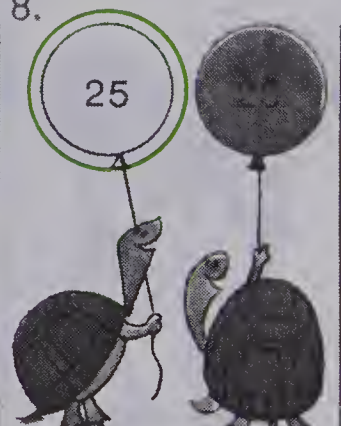
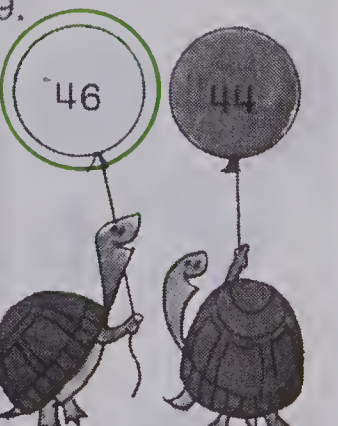
Panels 7-9: Each seal has a ball on its nose. The child is to ring the ball that shows the greater number.

Greater Than

1.  2. 

3.  4. 

5.  6. 

7.  8.  9. 

84 (eighty-four) Comparing tens and ones through 50, is greater than

Using the Book Panel 1-6: The child counts the number of blocks in each group and writes the two-digit numeral for each group. Have the child ring the numeral that names the greater number.

Panel 7-9: In each panel, have the child read the numerals on each balloon. Then have the child ring the balloon that shows the greater number.

OBJECTIVES

To write two-digit numerals
To compare the tens and then the ones
and show which of two numbers
is greater

PACING

Level A All (1-3, 7 guided)
Level B All (1-3, 7 guided)
Level C All (1-2, 7 guided)

MATERIALS

4 ten-boxes, 8 blocks

SUGGESTIONS

Initial Activity Display a group of 23 blocks and a group of 25 blocks. Have the child write the appropriate two-digit numeral next to each group of blocks. Direct attention to the number of tens. Elicit that the number of tens is the same. Challenge the child to ring the numeral that names the greater number. Stress that if the digits in the tens place are the same then we always compare the digits in the ones place. Since 5 ones is greater than 3 ones, 25 is greater than 23.

ACTIVITIES

1. The same activity as described on page 83, may be used again. At first, keep the tens the same and vary the ones. Then show some pairs in which both the tens and the ones are different.

2. Adapt the game Bingo as described in Activity Reservoir. Fill the cells with two-digit numbers less than 50. Make calls such as, "one greater than 25."

3. Play Battle as described in the Activity Reservoir.

OBJECTIVES

To write two-digit numerals
To compare tens and show which of two numbers is less

PACING

Level A All (1-3, 7 guided)
Level B All (1-3, 7 guided)
Level C All (1-2, 7 guided)

MATERIALS

3 ten-boxes, 12 blocks

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display a group of 16 blocks and a group of 26 blocks. Have the child write the appropriate two-digit numeral for each group of blocks. Encourage the child to ring the numeral that names the lesser number. Stress that we always compare the digits in the tens place first. Since 1 ten is less than 2 tens, 16 is less than 26.

ACTIVITIES

1. The same activity as described on page 83, may be used for less than. Have the child tell the number of each set and tell which number is less.
2. Adapt the game Battle as described in the Activity Reservoir. Make cards with the tens different but the ones the same. The child who has the lesser number takes both cards.
3. Call out a two-digit number. Challenge the child to write all the two-digit numerals with the same ones digit but the tens will be less.

Less Than

1. 		2. 	<u>32</u>
			<u>13</u>
3. 	<u>24</u>	4. 	<u>40</u>
	<u>15</u>		<u>30</u>
5. 	<u>23</u>	6. 	<u>50</u>
	<u>33</u>		<u>31</u>
7. 		8. 	
		9. 	

Comparing tens through 50, is less than (eighty-five) 85

Using the Book Panel 1: Guide the child to associate 20 with the yellow ten-boxes and trace the numeral. Then ask, "How many blue ten-boxes? (3)" Associate 30 with 3 tens and trace the numeral. Have the child identify which group has fewer ten-boxes. Then explain that the number 20 is less than the number 30; trace the ring around 20.

Panel 2: Ask, "How many green ten-boxes? (3) How many green blocks? (2)" Tell the child to write 32 for 3 tens and 2. Then ask, "How many blue ten-boxes? (1) How many blue blocks? (3)" Guide the child to write 13 for 1 ten and 3. Elicit that there are fewer blue blocks than green blocks, so 13 is less than 32. Have the child draw a ring around 13.

Panels 3-6: Direct the child to look at the picture and write the two-digit numeral for each group. Then the child is to ring the numeral of the lesser number.

Panels 7-9: Each penguin is holding two balls. The child is to ring the ball that names the lesser number.

Less Than

1. <u>25</u> <u>22</u>	2. <u>32</u> <u>33</u>	
3. <u>24</u> <u>26</u>	4. <u>16</u> <u>14</u>	
5. <u>42</u> <u>41</u>	6. <u>30</u> <u>32</u>	
7. <u>20</u> 26	8. <u>35</u> 37	9. <u>41</u> 40

86 (eighty-six) Comparing tens and ones through 50, is less than

Using the Book Panels 1-6: For each panel, the child counts the number of blocks in each group and writes the two-digit numeral for each group. Have the child ring the numeral that names the lesser number.

Panels 7-9: For each pair of snails, the child is to ring the numeral for the lesser number.

OBJECTIVES

To write two-digit numerals

To compare the tens and then the ones and show which of two numbers is less

PACING

Level A All (1-3, 7 guided)

Level B All (1-3, 7 guided)

Level C All (1-2, 7 guided)

MATERIALS

6 ten-boxes, 8 blocks

SUGGESTIONS

Initial Activity Display a group of 33 blocks and a group of 35 blocks. Have the child write the appropriate two-digit numeral next to each group of blocks. Direct attention to the number of tens. Elicit that the number of tens is the same. Challenge the child to ring the numeral that names the lesser number. Stress that if the digits in the tens place are the same then we always compare the digits in the ones place.

ACTIVITIES

1. Adapt the game Battle in the Activity Reservoir to any number less than 50. The player with the lesser number gets both cards.

2. Adapt the game Bingo as described in the Activity Reservoir. Fill the cells with two-digit numerals less than 50. Make calls such as, "one less than 25."

3. Write a two-digit numeral. Have the child copy it. Challenge the child to write the numeral for the number that is one greater on its right and then one less on its left.

OBJECTIVE

To count by twos to 50

PACING

- Level A 87 All (guided)
88 All (top row guided)
- Level B 87 All (1 guided)
88 All
- Level C 87 All (1 guided)
88 All

VOCABULARY

twos

MATERIALS

number chart, tags for the numerals 1-50 (See Activity Reservoir.)

SUGGESTIONS

- Initial Activities
1. You might review counting by ones using the Number Chart and tags for the numerals 1-50. Stress that the numerals on each tag tell how many tags have been counted.
 2. Next turn over the numeral tags for 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19 etc. Guide the child in counting the tags again, naming only the numbers whose numeral tags are shown. (two, four, six, etc.) Elicit the idea that the child is counting by twos and that it is faster to count by twos.

1.

Twos

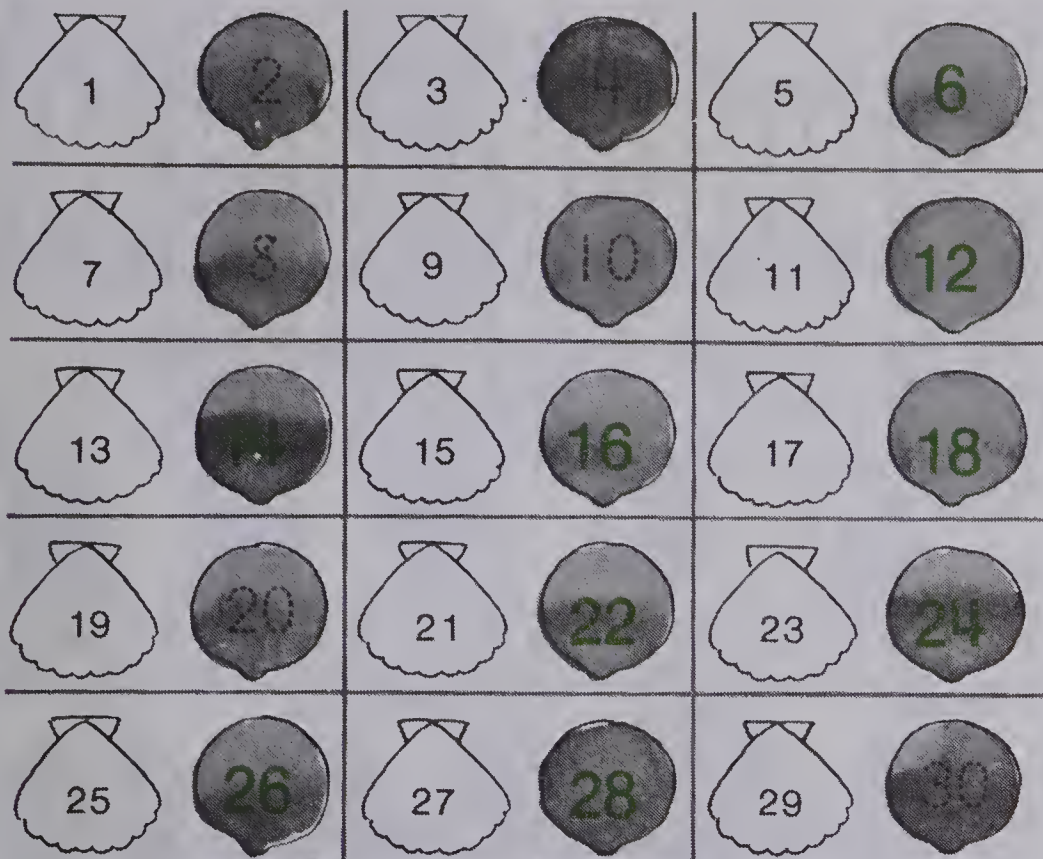
2.

AT HOME Let the child count by 2 s to 20 orally. Then count 20 pennies by 2 s

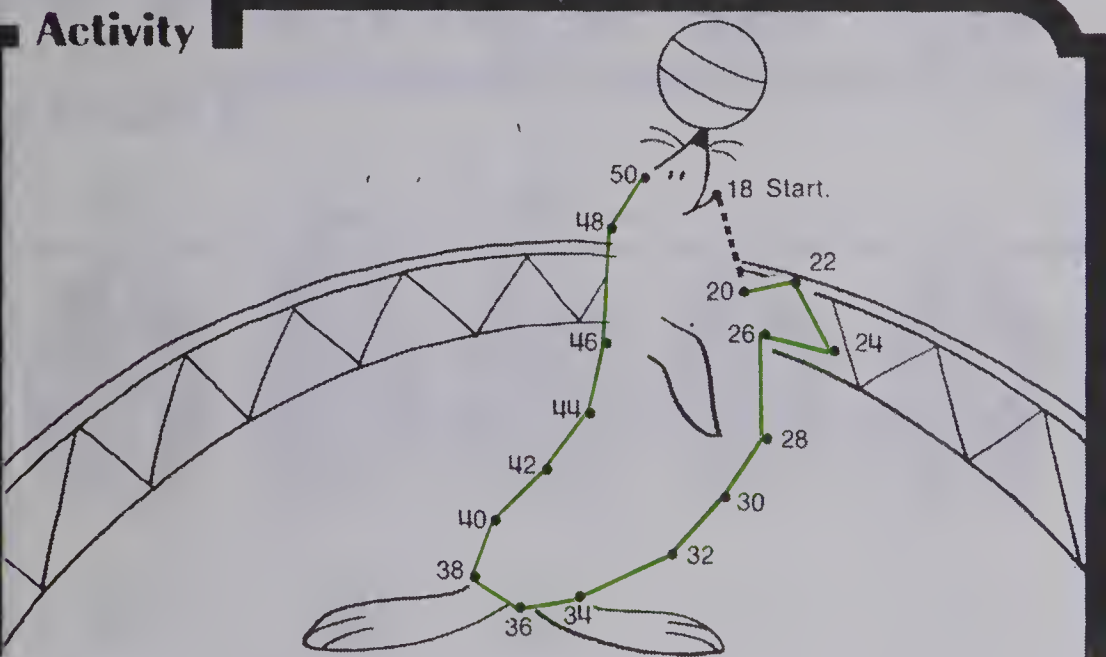
Counting by twos (eighty-seven) 87

Using the Book Panel 1: Point out that the frogs are grouped by twos. Guide the child to count “one, two” and trace the numeral 2 below, because two are counted. Then have the child count “three, four” and trace the numeral 4 below, because four are then counted. Continue to guide the child to count “five, six” write 6, “seven, eight”, write 8, and “nine, ten” write 10. Ask, “How many frogs in all? (10)” Have the child read the numerals in the arrows. Explain that the child has just counted by two’s. Next ask the child to write the missing numerals in the row of white and blue boxes below. Explain that when counting by two’s, we begin with two. Then have the child read the numerals in only the blue boxes.

Panel 2: Direct attention to the fact that there are two worms in each boat. Tell the child to fill in the blanks beneath the boats counting by twos. If necessary the child can check by counting the worms in each boat. For the last row, point out that numbers in the ones place are in the same order as the numbers above.



Activity



88 (eighty-eight) Practice • Activity: Counting by twos (18-50)

Using the Book Top of page: Explain that the child is to write a missing numeral on each pink shell. The child can say, "one" softly and then trace 2 on the first pink shell. Then the child can say, "three" softly and trace 4 on the next pink shell. Read, "two, four, six" aloud and say, "This is the way to count by twos. There are six shells in all in the first row." Direct the child to continue counting by twos and writing these numerals. When finished the child can color each white shell pink and practice counting by twos.

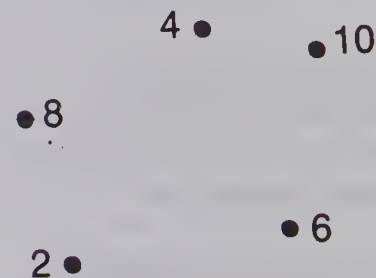
Activity: Have the child start at 18 and trace the line to 20. Explain the child is to continue counting by 2's to 50 to draw the picture. You may review the 0, 2, 4, 6, 8 order of the ones digit saying, "Look at 20, 22, 24, 26, 28 written on the pink shells above." When finished, the child will enjoy coloring the picture of a seal.

ACTIVITIES

1. Provide opportunities throughout the day for the child to practice counting by twos. For example, the child may count the children, books, and so on.

2. Adapt the game Queen's Plate as described in the Activity Reservoir. Have each team count off in 2's. When one child on a team misses, the other team advances their horse one furlong.

3. The child can create a dot picture for counting by twos to 30. The numerals may be written randomly on the page as:



Another child can connect the dots in order and tell what object the picture looks like.

4. You might lead a discussion on the concept of a pair. Tell the child that we buy shoes in pairs. Ask, "How many are in a pair?" Emphasize that a pair is two. Encourage the child to name different things that come in pairs.

5. A Lotto game may be played with a different arrangement of multiples of 2, through 50 on different cards. The child places a button or disk on the numeral that means 2 more than the numeral called out, if on their card. The child who covers all the numerals in a column first wins.

OBJECTIVE

To count by fives to 50

PACING

Level A	89 All (guided) 90 All
Level B	89 All (1 guided) 90 All
Level C	89 All (1 guided) 90 All

VOCABULARY

fives

MATERIALS

number chart, tags for 1 through 50
(See Activity Reservoir.)

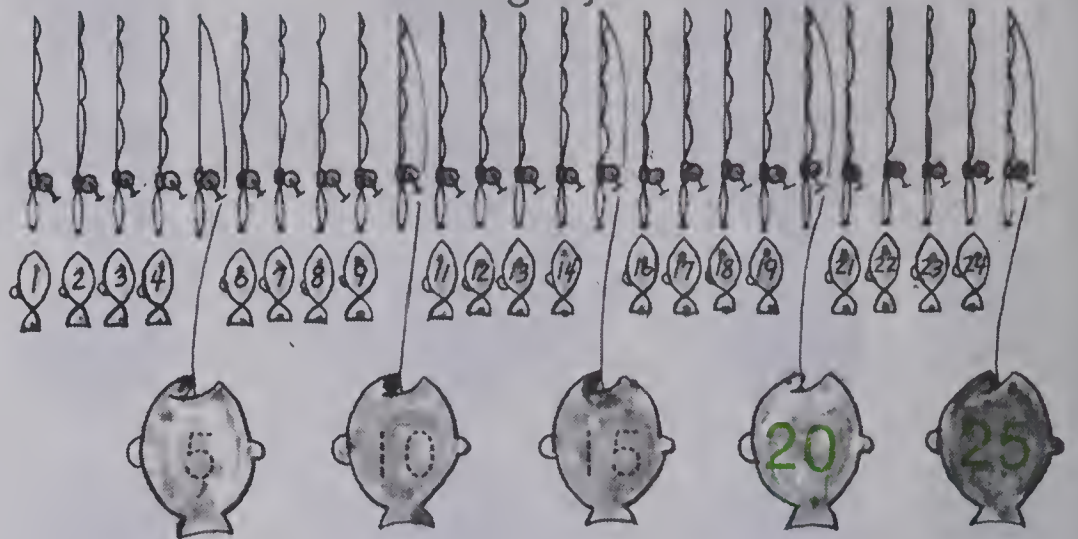
SUGGESTIONS

Initial Activities 1. Have one child stand and hold up both hands with fingers spread wide apart. Have the child tell how many fingers are on each hand and how many in all. Then have another child stand and hold up both hands the same way. Have a child point to each finger as they are counted. Suggest that the child say the number names 1, 2, 3, and 4 softly then say 5 loudly then say 6, 7, 8, 9 softly and say 10 loudly, etc. Point to each hand and guide the child to say only the counting numbers "five, ten, fifteen, twenty." Elicit the idea that this is counting by fives.

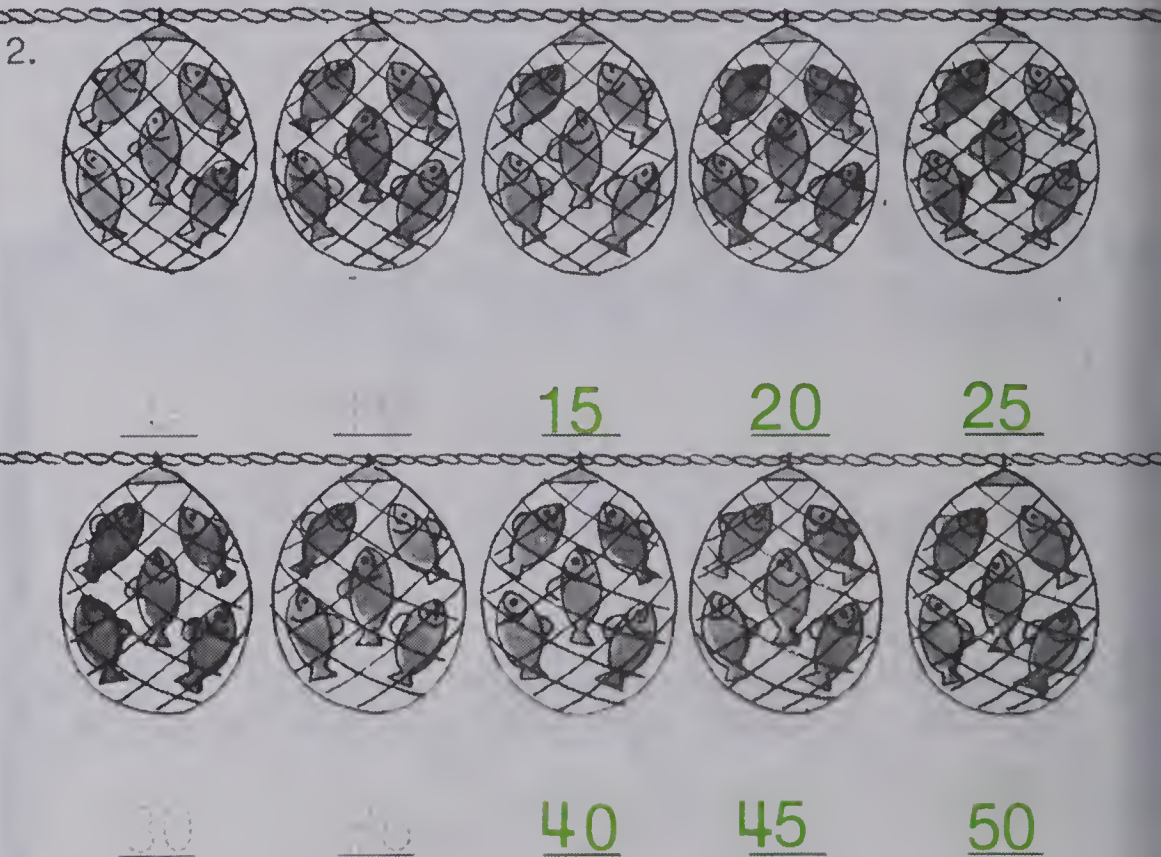
2. Display the Number Chart and the numeral tags for 1 through 50. Guide the child in counting by ones through 50. Then have the child count by fives through 50 touching the appropriate tags while counting.

1.

Counting by Fives



2.



AT HOME Let the child count by 5's to 20

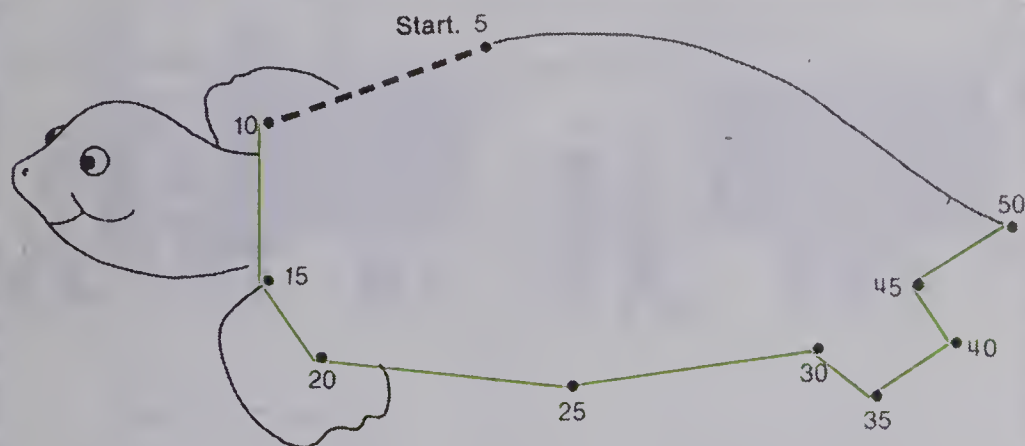
Counting by fives (eighty-nine) 89

Using the Book Panel 1: Direct attention to the fishing poles and numbered fish on each pole. Pointing to each, ask the child to count, "one, two, three, four, five," and then ask the child to trace the 5 written on the fish below. Explain that five fish have been counted. Then continue counting to ten and trace the 10 written on the fish below, because ten fish have been counted. Have the child continue to write the missing numerals. Then have the child read, "five, ten, fifteen, twenty, twenty-five" and explain that these are the numbers we say to count by 5's. Say, "There are 25 fish on poles in all." Point out the pattern of the ones digits: 5, then 0, then 5, then 0.

Panel 2: Ask, "How many fish are in each net? (5)" Count "five, ten." Have the child trace these numerals. Then say, "What number comes after 10 when we count by 5's? You may look above to see." Have the child write 15. Continue asking, "What comes next?" Write 20 and so on. Again point out the pattern for the ones digits: 5, 0, 5, 0, 5.



Activity



90 (ninety) Practice • Activity: Counting by fives (5-50)

Using the Book Top of page: Explain that the child is to write the missing numerals on the green snails. Have the child say, “five, ten” to count the snails on the first row. Say, “There are ten snails in this row.” Then ask, “What will be on the next green snail to count five more?” Have the child write 15. Again ask, “What will be on the next green snail to count five more?” Have the child write 20. Remind the child of the 5, 0 order of the ones digits and tell the child to continue writing the other missing numerals to count by 5.

Activity: The child should find the word, start, to begin this dot picture. The child can trace from 5 to 10 and continue drawing, counting by 5’s to 50. The child can color the turtle and then practice reading the numerals by 5’s to 50.

ACTIVITIES

1. Display 10 group pictures, with 5 members in each group (Similar to the fish in the nets on page 89.) Assist the child in counting by fives through 50 and placing the correct numeral tag below each group as it is counted.

2. You may use the flannel board (or the chalkboard) for the game Crossing the Stream. The child must point to and read each number in order, counting by fives, to get across the stream. Use yarn to represent water. Say that each numeral is on a stone. The child must step on the stones in order to cross the stream.

3. The child might enjoy creating original dot pictures for practicing counting by fives through 50. (See page 88, on the white background, for counting by twos.) Children might like to exchange dot pictures with other children.

4. Adapt the Queen’s Plate game, as described in the Activity Reservoir, to count by fives. Each team counts off by fives. When a child misses, the other team advances their horse one furlong.

OBJECTIVE

To choose the number sentence that fits a pictured problem

PACING

Level A	91 All (1-3 guided)
	92 All (1-2 guided)
Level B	91 All (1-3 guided)
	92 All
Level C	91 All (1 guided)
	92 All

SUGGESTIONS

Initial Activity Create situations involving joining groups and guide the child in writing the appropriate addition sentence that fits the situation. Then create situations involving separating groups and have the child write the appropriate subtraction sentence that fits the situation.

You may wish to use the ecology theme of page 91 for a consumer discussion. Ask children why they think it's important to keep the streets clean. Point out that if citizens kept streets clean, less street maintenance would be needed, therefore less money would be directed into this area.

You may use questions to lead a discussion on the duties of shipping and receiving clerks (page 92). Make sure children know that shipping means sending something and receiving means getting something. Questions might be "What would you have to do to send a package? (pack it, wrap it, add postage, etc.) What do you do when receiving a package? (open it, see if it's the right thing, put it away)."

Clean Up Time!

1.



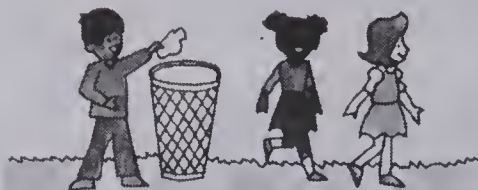
$$\begin{array}{l} 1 + 1 = 2 \\ 2 + 1 = 3 \\ 2 - 1 = 1 \end{array}$$

2.



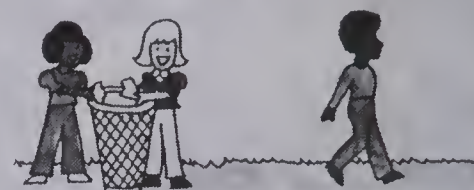
$$\begin{array}{l} 1 + 3 = 4 \\ 3 - 1 = 2 \\ 1 + 2 = 3 \end{array}$$

3.



$$\begin{array}{l} 3 - 2 = 1 \\ 4 - 2 = 2 \\ 1 + 2 = 3 \end{array}$$

4.



$$\begin{array}{l} 2 + 2 = 4 \\ 4 - 1 = 3 \\ 3 - 1 = 2 \end{array}$$

5.



$$\begin{array}{l} 3 + 1 = 4 \\ 4 - 2 = 2 \\ 3 + 2 = 5 \end{array}$$

6.



$$\begin{array}{l} 5 - 1 = 4 \\ 5 - 4 = 1 \\ 2 + 3 = 5 \end{array}$$

Choosing a number sentence to go with a problem (ninety-one) 91

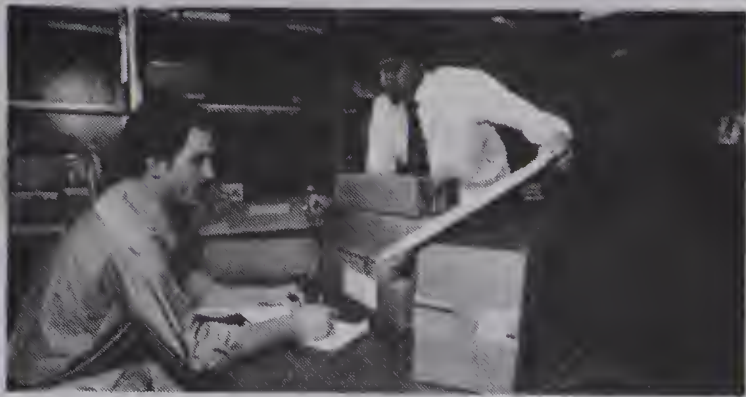
Using the Book You may explain that the pictures on this page are about cleaning up litter. Encourage the child to tell ways to help keep the school and neighborhood clean.

Panel 1: Say, "2 girls are putting litter in the basket and 1 boy is coming to help. This picture is about joining, so we add numbers to find how many children in all." Have the child find the addition sentence $2 + 1 = 3$ and trace the ring around it because it matches the picture.

Panel 2: Encourage the child to tell a story about this picture. Ask, "How many in all?" Help the child relate $1 + 2 = 3$ and ring this sentence.

Panels 3-6: Have the child explain what is happening in each picture. Then have the child decide whether addition or subtraction goes with the picture. Next have the child ring the number sentence that goes with the picture.

The Warehouse



1.



$$3 + 2 = 5$$

$$5 - 1 = 4$$

$$4 + 1 = 5$$

2.

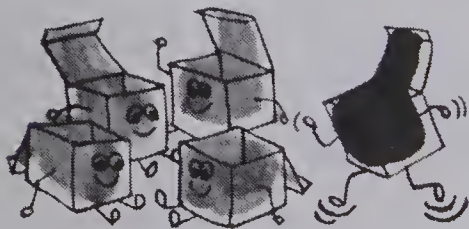


$$1 + 3 = 4$$

$$2 + 3 = 5$$

$$4 - 2 = 2$$

3.

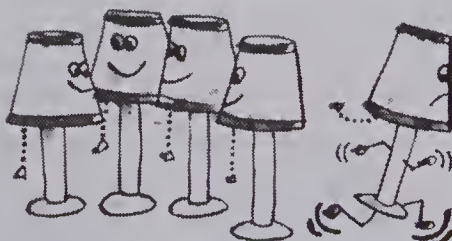


$$5 - 2 = 3$$

$$4 + 1 = 5$$

$$0 + 5 = 5$$

4.



$$5 - 1 = 4$$

$$4 + 0 = 4$$

$$1 + 4 = 5$$

ACTIVITIES

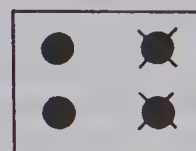
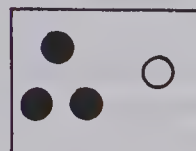
1. Display sentence cards for $3 + 1 = 4$, $3 - 1 = 2$, $2 + 3 = 5$, $5 - 4 = 1$. Dramatize each one in random order, using pictures on a magnetic or flannel board. Have the child find and read the sentence that matches.

2. You might have the child pack and unpack objects, colling out the different steps.

3. A worksheet may be prepared with dot pictures, one under the other on the left, such as those shown below. List sentences in mixed order, one under the other on the right side. Have the child match and complete.

4. You might have the child cut pictures from magazines for a collage. Make the theme various objects used for sending packages as boxes, crates, bins, etc.

5. Display pictures (5 or less in each) that suggest actions similar to those on page 91, or dot pictures as:



Have the child tell a story for each picture and write a number sentence that fits the story.

6. You might have 2 children set up a sending and receiving situation. One child can choose something to send, pack it, record it, send it. Another child can unpack it, record it, and put it away.

Using the Book Discuss the picture at the top of the page. You may explain that shipping clerks keep records of and send goods to receiving clerks in stores where these goods are to be sold. See Career Awareness in the Chapter Overview.

Panel 1: Have the child look at the picture. Ask, "How many blue crates? (3) How many brown crates are coming? (2) How many in all? (5)" Have the child find the addition sentence $3 + 2 = 5$ and read it.

Panels 2-4: Have the child look at each picture and decide whether addition or subtraction goes with the picture. Next have the child ring the number sentence that goes with the picture.

OBJECTIVES

- To review and maintain the following skills:
- To add to sum 5 in vertical form [47]
- To subtract from 5 or less in vertical form [61]
- To count and write numerals to 50 [79]

PACING

- Level A All
- Level B All
- Level C All

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concept is taught.

ACTIVITIES

- 1. Jigsaw Puzzle cards, as described in the Activity Reservoir, may be prepared for sums 5 and subtracting from 5.
- 2. Crossing the Stream may be played. (See Additional Activity on white background, page 90.) Instead of two-digit numerals, use the vertical fact form.
- 3. Bingo, as described in the Activity Reservoir, may be played. Use the vertical form in the cell. Call the numbers that would be sums or differences.

Keeping Fit

1.

3

+ 1

4

2

+ 2

4

0

+ 4

4

1

+ 4

5

5

+ 0

5

2

+ 3

5

3

+ 2

5

4

+ 1

5

1

+ 3

4

2.

3

- 2

1

2

- 1

1

1

- 1

0

3

- 1

2

4

- 2

2

4

- 0

4

4

- 4

0

5

- 4

1

5

- 3

2



3.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Keeping Fit: Addition and subtraction through sum 5; writing numerals 1-50 (ninety-three) 93

Using the Book Panel 1: Tell the child to add.
 Panel 2: Tell the child to subtract.
 Panel 3: Direct the child to write the numerals in order. Tell the child to trace the dashed numerals when they appear.

1.

1 ten + 0 ones

10

2.

2 tens + 3 ones

23

3.

5 tens 50

4. 39 40 41

6 8 10

15 20 25

30 40 50

5.
$$\begin{array}{r} 0 \\ + 4 \\ \hline 4 \end{array}$$

6.
$$\begin{array}{r} 4 \\ - 4 \\ \hline 0 \end{array}$$

7.

9.

$4 + 1 = 5$

$5 - 1 = 4$

$5 - 4 = 1$

8.

94 (ninety-four) Chapter 4 Test

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A All
Level B All
Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Play Basic Fact Practice Cards as described in the Activity on page 72. Include expanded and standard numerals for 10-50.

2. Play the card matching game described in the Activity on the blue screen, page 72. Include expanded and standard numerals for 10-50.

3. Play this game to practice counting by 2's, 5's, and 10's through 50. Seat several children in a circle and have one child begin counting in a clockwise direction. The child whose turn it is to say 2 or a multiple of 2 says "buzz" instead. When a child says a wrong number or forgets to say "buzz", that child starts the game over again by saying 1.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panels 1-2: The child is to complete each expanded numeral and write the standard or two-digit numeral below. [page 71 B, C]

Panel 3: Have the child write how many tens and the standard numeral. [page 77 A]

Panel 4: Have the child recognize each counting pattern and write the missing numerals. Remind the child that each hand means that a new pattern starts. [pages 75, 87, 77, 95 G]

Panel 5: Tell the child to add. [page 93 E]

Panel 6: Tell the child to subtract. [page 93 E]

Panel 7: Have the child ring the numeral for the number that is greater. [page 83 F]

Panel 8: Have the child ring the numeral for the lesser number. [page 86 F]

Panel 9: Have the child ring the sentence that fits the picture. [page 81 H]

CHAPTER 5 OVERVIEW

LEVEL 5

Addition and subtraction for sum 6 are introduced in this chapter, as well as related addition and subtraction sentences and families. The number line is used for addition and subtraction. The art theme of this chapter is “The Farm.”

OBJECTIVES

- A To complete related addition and subtraction sentences, sums 6 and less
- B To find sums for addition facts, sums 6 and less
- C To find differences for subtraction facts, from 6 and less
- D To compare numbers by subtraction
- E To write the appropriate operation sign for a number sentence to solve a pictured problem

VOCABULARY

related sentences 103

family 103

BACKGROUND

When we combine all the related addition and subtraction sentences using the same 3 numbers, we call it a family.

For example:

$$1 + 5 = 6$$

$$6 - 5 = 1$$

$$5 + 1 = 6$$

$$6 - 1 = 5$$

In some cases there are only two sentences in an addition and subtraction family, that is when the two addends are the same.

For example:

$$3 + 3 = 6$$

$$6 - 3 = 3$$

2. We use subtraction to compare two numbers—to find how much more one number is than another number.

MATERIALS

blocks (6 of each color) red, blue, and green
two-row dot cards for sum 6 (See page 107.)
dot chart for sum 6 (See page 43.)
numeral cards 0-9
100 tooth picks
masking tape (for number line)
Dot Set Cards, addition and subtraction for 5 or less
(See Activity Reservoir.)

CAREER AWARENESS

Television and Radio Service Technicians [95]

These technicians first check over the television set or radio to find out where the cause of the problem is, such as broken connections or faulty tubes. Sometimes reading wiring diagrams and service manuals that show connections helps the technician find the problem. Once the cause of the problem is located, they replace any broken parts and adjust the set to work at its best. These technicians use hand tools such as screwdrivers, pliers, wire cutters, and soldering irons, along with the use of special test equipment.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that televisions and radios are major means of communication and entertainment. Keeping radios and television sets in efficient working condition is essential in today's society.

Photo description: The technician is using a soldering iron to repair radio components.

BULLETIN BOARD

1. The art theme of this chapter is "The Farm." The art reflects the animals that live on a farm, the work of farmers, and food we get from a farm. It might be exciting for the children to help you create a bulletin board about "Life on a Farm."

2. Have the children play a "Clothesline Game," for practicing addition and subtraction (sums to 6). A length of yarn or string is pinned to the bulletin board. Since the theme of this chapter is "The Farm," cut out figures of farm animals, six of each kind, like ducks, chickens, pigs, etc., using oaktag. To show the subtraction $6 - 4$, have a child choose 6 cut outs (all the same) and pin them up using clothespins. Ask another child to remove 4 of the 6. Then have another child show the subtraction card for this subtraction. Addition may also be developed in a similar manner.

3. You may provide 20 construction paper units, as shown below:



Give one or more to each of several children. Have the children take turns to place these in order, left to right on the bulletin board, to make a number line to 20.

OBJECTIVE

To write a plus or minus sign and complete a number sentence

PACING

Level A All (guided)

Level B All (guided)

Level C All (guided)

SUGGESTIONS

Initial Activity Have some children dramatize the situation $2 + 3 = 5$. Ask 2 girls to stand. Have 3 boys join them. Ask, "How many in all?"

You may wish to combine the consumer and career aspects of this page. Point out that people have radios and televisions repaired because it's cheaper than buying new ones. Appliances not in good working condition can use more electricity than necessary. Explain that technicians have to know how to put a radio or television together and take it apart to fix one.

ACTIVITIES

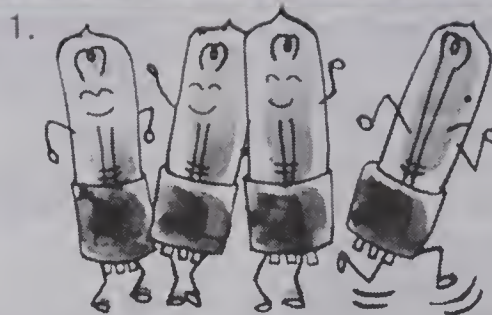
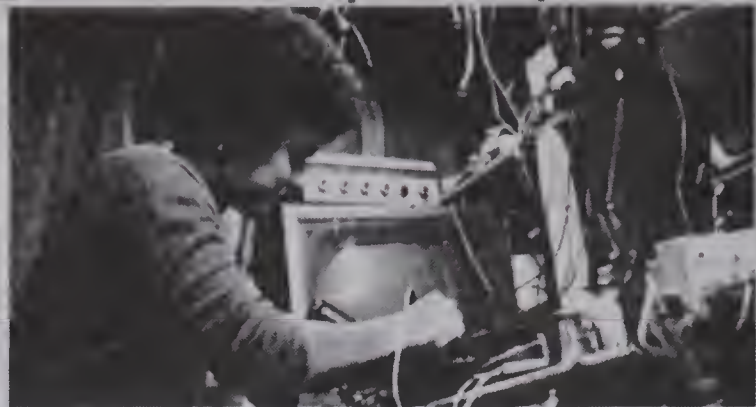
1. You may guide the child in using pictures of radios and televisions to dramatize addition and subtraction situations. For each situation have the child write the sign and complete the number sentence that fits.

2. Provide several sentences as $1 \bigcirc 3 = 4$ and let the child write the correct sign to complete the sentence. Then have the child demonstrate the sentence with manipulatives.

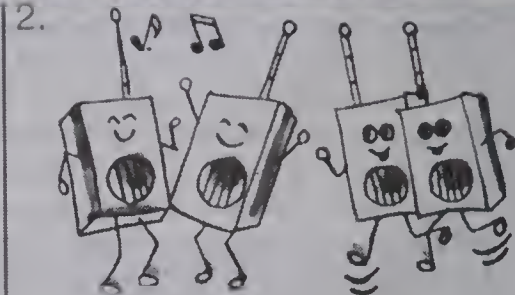
3. A vertical picture graph may be made showing the total number of radios and televisions in the class' homes.

4. You may assist children in writing names of favorite television and radio programs with the channel or station number and day of the week.

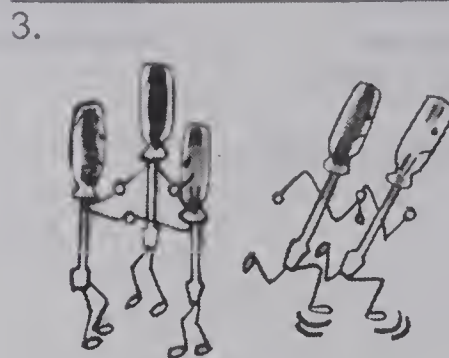
The Repair Shop



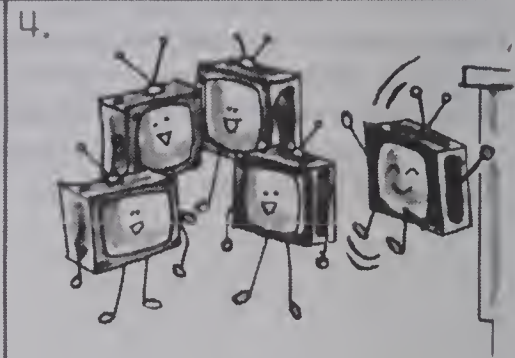
$$4 \bigcirc 1 = \underline{\quad}$$



$$2 \bigoplus 2 = \underline{4}$$



$$5 \bigominus 2 = \underline{3}$$



$$4 \bigoplus 1 = \underline{5}$$

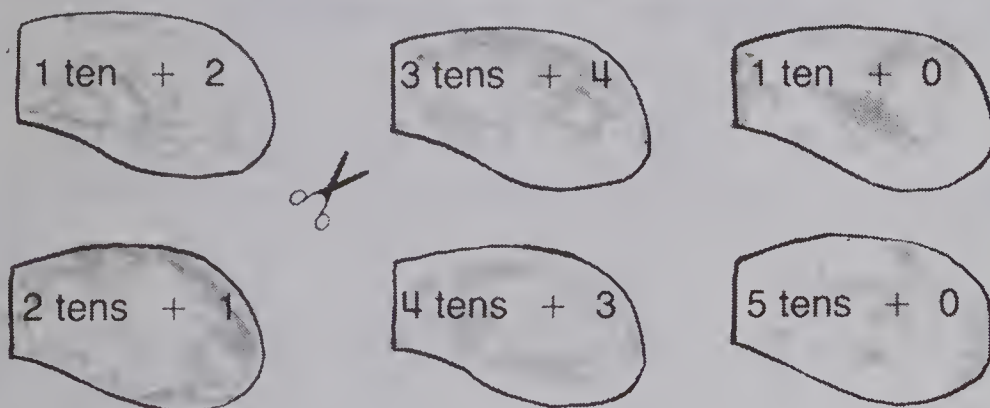
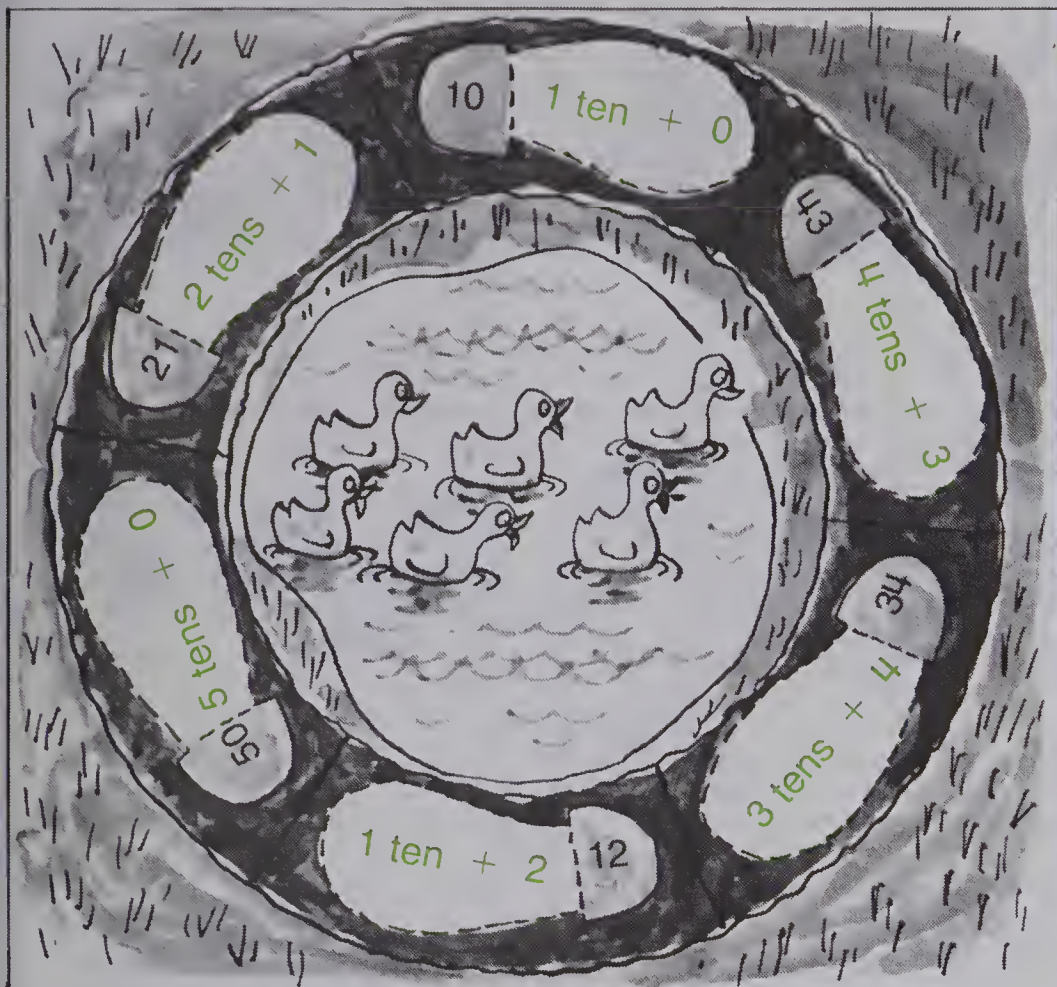
Deciding whether to add or subtract in a problem (ninety-five) 95

Using the Book Discuss the picture at the top of the page. Explain that there are people who fix televisions and radios when they are broken. See Career Awareness in the Chapter Overview.

Panel 1: Ask, "How many television tubes are dancing? (3) How many are coming to join them? (1) How many in all? (4)" Have the child relate the sentence $3 + 1 = 4$ to the question and trace the sum.

Panels 2-4: The child is to look at each picture to see what is happening in it and complete the sentence to solve the addition problem.

Around the Pond



OBJECTIVES

To use place value meaning to 50
To read standard and expanded numerals

PACING

Level A All
Level B All
Level C All

MATERIALS

100 toothpicks

SUGGESTIONS

Initial Activity Have the child group toothpicks to demonstrate various numbers as 1 ten + 3. Then have the child write the two-digit numeral. (50 or less)

ACTIVITIES

1. You may provide cards for expanded and standard numerals (50 and less) in two different sets. Have the child match the cards.

2. A game board may be provided like the "take a walk around the pond" picture. Attach different expanded numerals on the "shoe sole." Print START at some footprint on the picture. You may have two or more rest places.

Each player can have a different colored, very small footprint, so that more than one can be resting in a place at the same time. The player moves to each footprint by saying the standard numeral.

3. Have the child play Stop the Magician as described in the Activity Reservoir. Provide the child with various expanded numerals and the child is to say the two-digit numeral. When the child makes a mistake, start erasing the man.

Using the Book This is a "take a walk around the duck pond" activity. To do this, each footprint must be completed. The child is to find each matching vertical addition (sole) to go with each answer (heel). Tell the child to cut out the soles at the bottom of the page. Then have the child paste the sole in the correct place to match the answer. Tell the child to read the addition and the answer. The child may enjoy coloring the footprints different colors.

OBJECTIVES

To complete addition sentences for sum 6
To add, sums 6 or less, in vertical form

PACING

Level A	97 All (1-2 guided) 98 All
Level B	97 All (1-2 guided) 98 All
Level C	97 All 98 1, 3, 5, 7

MATERIALS

different colored rows of dots on a chart with a diagonal line from sum 6 (See Initial Activity on page 43.)

SUGGESTIONS

Initial Activity Use a dot chart as described above.

Assist the child in writing the addition sentence for sum 6 that fits each row of dots.

ACTIVITIES







1. Mix the addition sentences for sum 6 with the sum missing. Using the dot chart, assist the child in matching each sentence to the sets of dots and naming the sum.

2. Write these addition sentences. The child can copy these on the third page in the Addition Book. See page 46.

$6 + 0 =$	$5 + 1 =$
$0 + 6 =$	$1 + 5 =$
$4 + 2 =$	$3 + 3 =$
$2 + 4 =$	

3. Matching the Sum, as described in the Activity Reservoir, may be played, including sums through 6.

Six

<p>1. </p> <p>$4 + 2 = \underline{\quad}$</p>	<p>2. </p> <p>$2 + 4 = \underline{6}$</p>
<p>3. </p> <p>$5 + 1 = \underline{6}$</p>	<p>4. </p> <p>$1 + 5 = \underline{6}$</p>
<p>5. </p> <p>$6 + 0 = \underline{6}$</p>	<p>6. </p> <p>$0 + 6 = \underline{6}$</p>
<p>7. $\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$</p>	<p>$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$</p>
<p>$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$</p>	<p>$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$</p>
	<p>$\begin{array}{r} 5 \\ + 0 \\ \hline 5 \end{array}$</p>
	<p>$\begin{array}{r} 0 \\ + 6 \\ \hline 6 \end{array}$</p>

Adding, sum 6 (ninety-seven) 97

Using the Book Panel 1: Say, "4 chickens are eating. 2 turkeys are coming. How many altogether? (6)" Explain that the sets are being joined to make one set. Direct attention to and read, "4 plus 2 equals 6." Explain that 4 and 2 are addends or numbers added. You may have the child draw a line from 4 to the 4 chickens and a line from 2 to the 2 turkeys. Point out that the sum or how many in all is 6. The child can trace the 6.

Panel 2: Point out that the sets are the same as in the first picture but are in an opposite order and action. Ask the child to draw a line from 2 to the 2 turkeys, and from 4 to the 4 chickens. Ask, "How many in all?" Have the child write the sum 6. Read, "2 plus 4 equals 6." Explain that $4 + 2 = 6$ and $2 + 4 = 6$ are related addition sentences because the numbers added are the same but in a different order. The sum is the same.

Panels 3-6: Follow procedures similar to panels 1-2. In Panel 5, 6 ducks are in the water. Zero means no ducks are coming to join them. In Panel 6, zero means no ducks are in the water. 6 ducks are coming.

Panel 7: Tell the child to add.

1. 2
+ 3
5

4
+ 1
5

0
+ 5
5

2
+ 4
6

1
+ 1
2

2. 2
+ 2
4

1
+ 3
4

3
+ 2
5

5
+ 1
6

1
+ 2
3

0
+ 6
6

3. 3
+ 3
6

4
+ 2
6

1
+ 5
6

1
+ 0
1

1
+ 4
5

0
+ 4
4

4. 3
+ 1
4

0
+ 6
6

2
+ 3
5

2
+ 2
4

3
+ 3
6

5. 5
+ 1
6

4
+ 1
5

0
+ 3
3

2
+ 1
3

2
+ 4
6

3
+ 1
4

6. 1
+ 3
4

3
+ 2
5

6
+ 0
6

2
+ 2
4

1
+ 4
5

3
+ 3
6

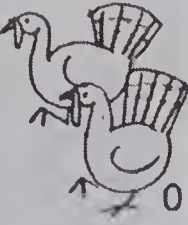


7. 4
+ 2
6

1
+ 2
3

5
+ 1
6

3
+ 0
3

1
+ 2
3

98 (ninety-eight) Addition facts to 6

Using the Book Panels 1-7: Tell the child to add.

Have the child cut pictures from magazines to show addition facts to 6. Have the child paste down, on blank paper, sets of pictures to show these vertical addition facts:

1
+5

2
+4

3
+3

4
+2

5
+1

6
+0

Then have the child give the sum.

EXTRA PRACTICE

Tell the child to add.

1. 2
+4
6

3
+1
4

0
+5
5

3
+3
6

2
+3
5
2. 1
+5
6

2
+2
4

4
+2
6

4
+1
5

0
+6
6
3. 2
+1
3

3
+2
5

5
+1
6

1
+1
2

3
+0
3

Prepare this puzzle. The child should write only the answers. (Answers are included.)

1. 4	6			6. 5
		5. 2	5	
2. 2				8. 1
	3. 6		7. 4	
4. 2		9. 3		10. 5

- Across

1. 4 tens + 6 ones

3. 3 + 3

5. two tens + five ones

7. 2 + 2

9. 5 - 2
- Down

2. 4 - 2

4. 6 - 4

6. 5 - 0

8. 6 - 5

10. 3 + 2

OBJECTIVES

To complete subtraction sentences for subtraction from 6

To subtract from 6 or less, in vertical form

PACING

Level A 99 All (1-2 guided)

100 All

Level B 99 All (1-2 guided)

100 All

Level C 99 All (1 guided)

100 All

MATERIALS

the dot chart described on page 97, with an X on each dot to the right of the diagonal line

SUGGESTIONS

Initial Activity Using the chart described above, assist the child in writing the subtraction sentences that fit each row of dots.

ACTIVITIES

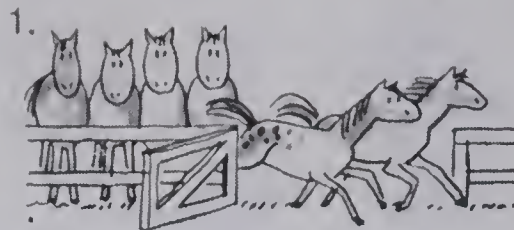
1. Mix the subtraction sentences (from 6) with the differences missing. Using the dot chart, assist the child in matching each sentence to the groups of dots and finding the difference.

2. Write these vertical subtraction problems. The child can copy these on the next page in the Subtraction Book. See page 56.

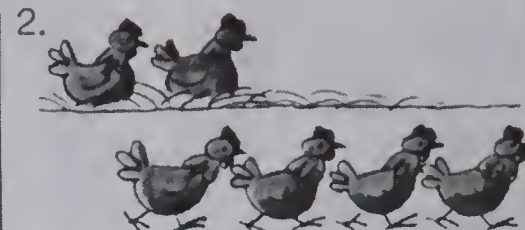
$$\begin{array}{r} 6 \\ -0 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -2 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -1 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -5 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$

Subtracting from Six



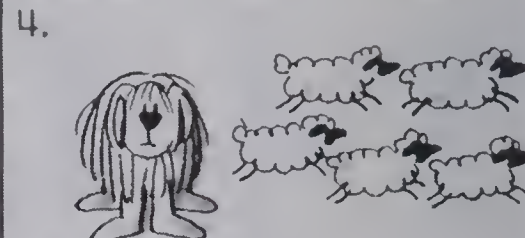
$$6 - 2 = \underline{\quad}$$



$$6 - 4 = \underline{2}$$



$$6 - 1 = \underline{5}$$



$$6 - 5 = \underline{1}$$



$$6 - 0 = \underline{6}$$



$$6 - 6 = \underline{0}$$

7. $\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$	$\begin{array}{r} 6 \\ -6 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array}$	$\begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$
---	--	--	--	--	--



Subtraction facts for 6 (ninety-nine) 99

Using the Book Panel 1: Say, "6 horses in all. 2 are running out. How many are left?" Explain that the group is being separated. Direct attention to $6 - 2 =$ Have the child draw a line from 2 to the 2 horses going. Then the child can trace the number of the other group (4) in the blank and draw a line to the 4 horses staying. Read, "6 minus 2 equals 4." Explain that the number 2 is subtracted from 6, and the difference, or how many left is 4.

Panel 2: Have the child tell a story about this picture. Direct attention to $6 - 4 =$ Have the child draw a line from 4 to the chickens. Then the child can write the number of the other group (2) in the blank and draw a line to the 2 chickens. Read, "6 minus 4 equals 2." Explain that $6 - 2 = 4$ and $6 - 4 = 2$ are related subtraction sentences because the numbers in both sentences are the same.

Panels 3-6: Follow procedures similar to panels 2-1. In panel 5, there are 6 goats grazing. Zero means no goats are going away. In panel 6, there are 6 ducks in all. All 6 ducks are going away; zero means there are no ducks left in the pond.

Panel 7: Tell the child to subtract.

1.	$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ -3 \\ \hline 0 \end{array}$	$\begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$
2.	$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$		$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array}$	$\begin{array}{r} 1 \\ -0 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array}$
3.	$\begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline 0 \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ -2 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$
4.	$\begin{array}{r} 1 \\ -1 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ -0 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ -2 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -6 \\ \hline 0 \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline 3 \end{array}$
5.	$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$		$\begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$
6.	$\begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ -2 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ -0 \\ \hline 5 \end{array}$	$\begin{array}{r} 4 \\ -4 \\ \hline 0 \end{array}$
7.	$\begin{array}{r} 6 \\ -6 \\ \hline 0 \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -0 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$	$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array}$

100 (one hundred) Practice, subtraction facts to 6

Using the Book Panels 1-7: Tell the child to subtract.

ACTIVITIES

1. The child may match four related sentences with each Dot Set Card to sum 5. (See Activity Reservoir.)

2. Prepare cards which show three numbers such that the third number will be the sum of the first two (to sum 5). Challenge the child to write four related sentences for each card. As for 3, 2, 5 the child can write:

$$3 + 2 = 5 \quad 5 - 2 = 3$$

$$2 + 3 = 5 \quad 5 - 3 = 2$$

3. Matching the Sum or Difference, as described in the Activity Reservoir, may be played through sum 5 or subtracting from 5.

4. Sentence cards (playing size) to sum 5 and from 5 may be shuffled together. Five cards may be dealt to each player. The others can be placed in a stack face down on the table. Each player in turn draws a card. It may be kept or discarded in another pile. Each player is trying to get sets of four related cards, as $4 + 1 = 5$, $1 + 4 = 5$, $5 - 1 = 4$, $5 - 4 = 1$. If no child has a match, reshuffle the discard pile and keep playing.

5. Have the child use a display board (flannel or magnetic) to dramatize separating action stories. Ask the child to make up a story for each, and then write the vertical subtraction problem and give the difference.

EXTRA PRACTICE

Tell the child to subtract.

$$\begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array} \quad \begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array} \quad \begin{array}{r} 3 \\ -0 \\ \hline 3 \end{array} \quad \begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array} \quad \begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ -2 \\ \hline 1 \end{array} \quad \begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array} \quad \begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array} \quad \begin{array}{r} 4 \\ -0 \\ \hline 4 \end{array} \quad \begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array} \quad \begin{array}{r} 4 \\ -4 \\ \hline 0 \end{array} \quad \begin{array}{r} 2 \\ -0 \\ \hline 2 \end{array} \quad \begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array} \quad \begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 6 \\ -6 \\ \hline 0 \end{array} \quad \begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array} \quad \begin{array}{r} 1 \\ -1 \\ \hline 0 \end{array} \quad \begin{array}{r} 6 \\ -0 \\ \hline 6 \end{array} \quad \begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array}$$

OBJECTIVE

To review and maintain the following skills:

To decide which of two numbers is greater [83]

To decide which of two numbers is less [85]

To add, in vertical form, sums to 6 [97-98]

To subtract from 6, in vertical form [99-100]

PACING

Level A All (1-2 guided)

Level B All (top guided)

Level C All (top guided)

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concepts are taught.

ACTIVITIES

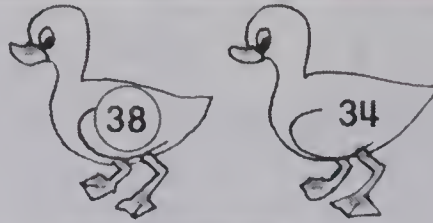
1. Jigsaw Puzzle Cards, as described in the Activity Reservoir, may be provided, including sums 6 and subtracting from 6.

2. Have the child use numeral cards to play Battle, as described in the Activity Reservoir.

3. Queen's Plate, as described in the Activity Reservoir, may be played using vertical addition and subtraction facts.

Keeping Fit

1.



12	(19)
----	------

(46)	41
------	----

15	(25)
----	------

(43)	39
------	----

2.



(20)	30
------	----

41	(40)
----	------

(18)	38
------	----

46	(37)
----	------

3.

1	6	5
+ 3	+ 0	+ 1
4	6	6

1	0	3
+ 4	+ 4	+ 2
5	4	5

2	1	3
+ 4	+ 5	+ 3
6	6	6

4.

5	5	6
- 3	- 5	- 0
2	0	6

6	4	5
- 3	- 3	- 1
3	1	4

6	5	6
- 4	- 2	- 5
2	3	1

Keeping Fit: Comparing numbers; addition and subtraction through sum 6 (one hundred one) 101

Using the Book Panel 1: You may need to help the child observe that a ring is drawn around 38 on the first duck because 38 is greater than 34. The child can continue to compare each two numbers in this panel and ring the greater number.

Panel 2: Again, help the child to observe that a ring is drawn around the 10 on the first chicken because 10 is less than 20. Have the child continue comparing each two numbers in this panel and ring the lesser number.

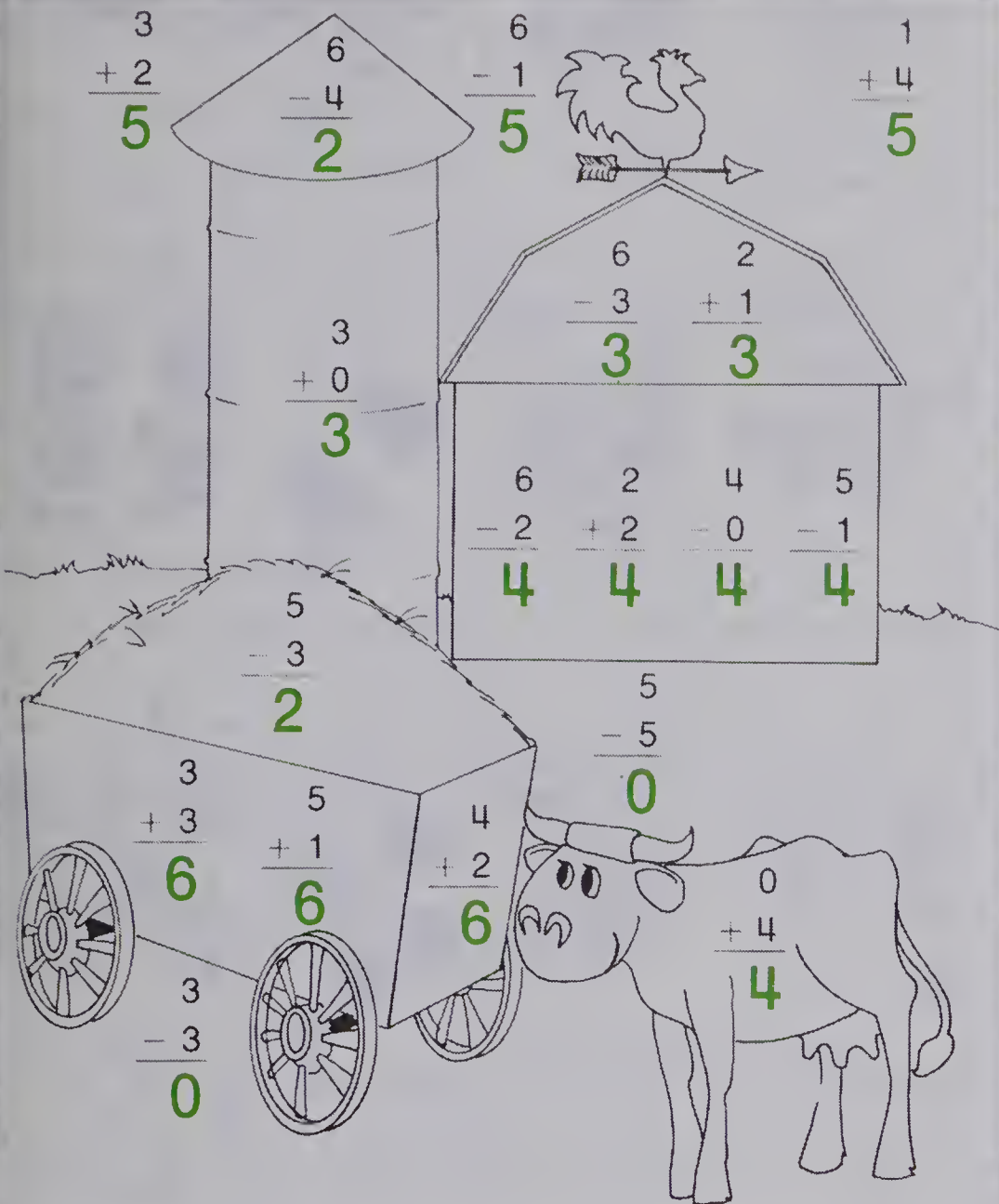
Panel 3: Tell the child to add.

Panel 4: Tell the child to subtract.

You may ask the child to find pairs of related addition and subtraction facts on this page. These can be copied and the same numbers matched as:

1	4
+ 3	- 3
4	1

3 red 5 blue 2 yellow
4 brown 0 green 6 orange



102 (one hundred two) Activity: Coloring by the numbers

Using the Book You may need to explain this activity to the child. Have the child look at the cow. Ask, "0 plus 4 equals what? (4)" Have the child write 4 below. Then tell the child to complete all the additions and subtractions on the page.

Have the child look at the cow again. Ask, "What is the sum? (4)" Tell the child to look at the crayons at the top of the page. "Find the crayon that has a 4 next to it." This is brown, so the child colors the cow brown. The child can continue to work this way to color all the things in the picture. (The child should color all of the sky blue and all of the ground green.)

You might have children describe any trips they have taken to a farm.

OBJECTIVE

To add and subtract, in vertical form, sums 6 and less

PACING

Level A All
Level B All
Level C All

MATERIALS

basic fact practice cards
(See Activity Reservoir.)

SUGGESTIONS

Initial Activity Before doing this activity page, prepare some vertical Basic Fact Practice Cards for sums 6 and less. (See the Activity Reservoir.) Mix 5 or 6 cards and have the child match cards that have the same number as a sum or difference. Then have the child turn over the cards and check.

ACTIVITIES

1. Have the child use the Basic Fact Practice Cards, as described in the Activity Reservoir, as flash cards. Each time a child does 5 cards, record the time. The child should try to beat each previous time.

2. You may reproduce a similar picture, as on page 102, on a large piece of chart paper and put it on the bulletin board. Place a tack under each exercise where the answer (sum or difference) would go. Provide slips of paper with various numbers from 0 through 6 as answer tags. Each slip of paper should have a hole in it so it can be hung on the tacks. (Make sure there are only as many tags as there are exercises.) Give 2 or 3 children an equal number of answer tags. Each child has to place the correct answer tag under an exercise by hanging it on the tack. The child who correctly places all of his/her tags first, wins.

3. Call out a number 6 or less. Have the child give all the additions or subtractions for that number. Repeat with other numbers.

OBJECTIVES

To match members of groups to find how many more are in one of the groups.
To find each difference by subtraction

PACING

Level A 103 All (1-4 guided)
104 All
Level B 103 All (1-3 guided)
104 All
Level C 103 All (1-2 guided)
104 All

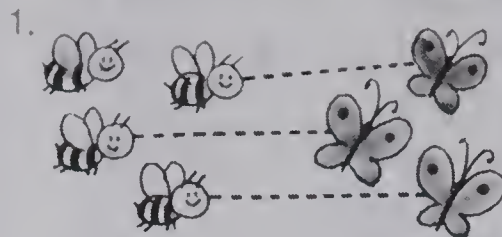
MATERIALS

6 red blocks, 6 blue blocks

SUGGESTIONS

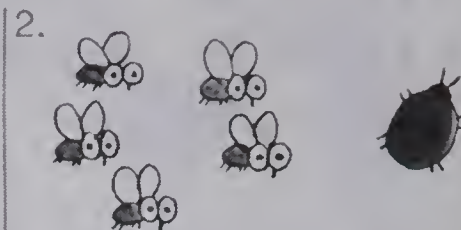
Initial Activity Display a group of 5 blue blocks and a group of 3 red blocks. (Arrange the groups of blocks so that the child can easily match the members of the two groups.) Elicit the fact that there are two ways to determine how many more blocks are in one set than the other group:
(a) matching the members of the groups and counting the unmatched members.
(b) counting the members in each group. Then subtract. Relate $5 - 3 =$ to this situation and complete.

How Many More?



How many more ?

$$4 - 3 = \underline{\quad}$$



How many more ?

$$5 - 1 = \underline{4}$$



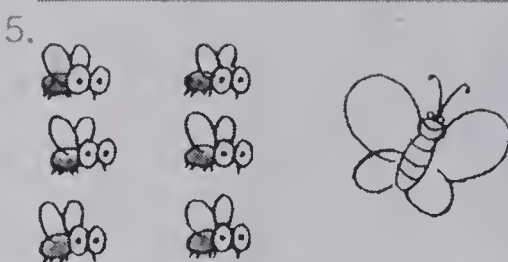
How many more ?

$$5 - 2 = \underline{3}$$



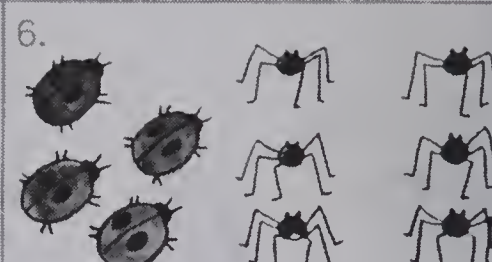
How many more ?

$$6 - 2 = \underline{4}$$



How many more ?

$$6 - 1 = \underline{5}$$



How many more ?

$$6 - 4 = \underline{2}$$

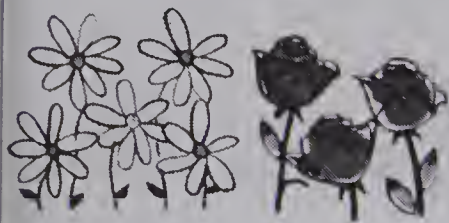
Comparing sets and subtraction (one hundred three) 103


Using the Book Panel 1: Ask, "How many bees? (4) How many butterflies? (3)" Then have the child trace each line from a bee to a butterfly. Point out that 1 bee cannot be paired. Ask, "How many more bees?" Explain that the bee in the sentence is not to be counted. Say, "We may subtract to find how many more bees there are than butterflies." Read, "4 minus 3 equals what?" Have the child trace the 1. You may have the child circle the extra bee.

Panel 2: Use procedures similar to those in panel 1.

Panels 3-4, and 6: Assist the child in completing these panels in a manner similar to those in panel 1. Notice that in these panels the group with more members is on the right.

Panels 5-6: Use procedures similar to panel 1.



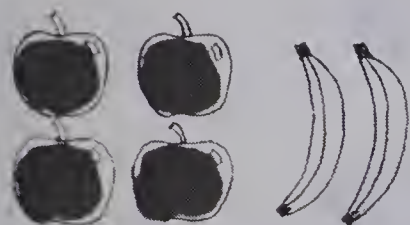
How many more  ?


$$5 - 3 = \underline{2}$$



How many more  ?


$$6 - 6 = \underline{0}$$



How many more  ?


$$4 - 2 = \underline{2}$$



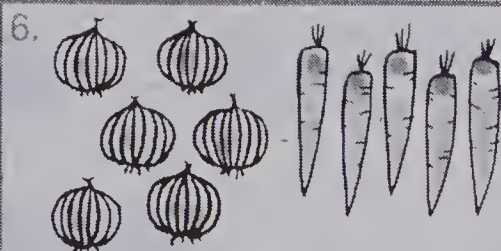
How many more  ?


$$5 - 4 = \underline{1}$$



How many more  ?

$$6 - 3 = \underline{3}$$



How many more  ?

$$6 - 5 = \underline{1}$$

ACTIVITIES

1. Dramatize matching groups of boys and groups of girls, as 5 boys and 2 girls. Have each girl stand facing one boy. Ask, "How many more boys than girls?" Write $5 - 2 =$ and have the child look at the compared groups to write the difference. Continue with other groups, as 6 and 4, 5 and 3, 6 and 3.

2. Have the child place 2 groups of objects on the flannel board. Ask, "Which group has more?" Tell the child to use yarn to match the objects. Then have the child write a subtraction sentence to fit the pictures and solve it.

3. Ask the child to draw a group of 6 red dots and a group of 2 blue dots. Compare the two groups to find how many more in the set of 6. Then challenge the child to write a subtraction sentence to fit this situation. Repeat this activity for other subtraction sentences (subtracting from sum 6 or less).

Using the Book Panel 1: Read, "How many more daisies? (2)" Remind the child that the daisy in the sentence is not to be counted. Then read, "5 minus 3 equals what? (2)" Have the child write 2 on the line and check by drawing a line from each daisy to each rose. Help the child to observe that 2 daisies are left unpaired.

Panels 2-6: Have the child continue to read each subtraction sentence and write the difference. To check, the child may draw lines to pair members of groups.

OBJECTIVE

To add and subtract using related addition and subtraction sentences, sum to 5

PACING

- Level A 105 All (guided)
106 All
Level B 105 All (1 guided)
106 All
Level C 105 All (1 guided)
106 All

VOCABULARY

related sentences

MATERIALS

Dot Set Cards for addition and subtraction
(See Activity Reservoir.)

BACKGROUND

See Item 1 of the Chapter Overview
Background.

SUGGESTIONS

Initial Activities 1. Display the Dot Card which illustrates $4 + 1$. Assist the child in stating the addition sentence and finding the sum. Turn the card around so the dots show $1 + 4$ and assist the child in stating this addition sentence and finding the sum. Elicit the idea that changing the order of the addends does not change the sum; that $4 + 1 = 5$ and $1 + 4 = 5$ are related addition sentences.

2. Using the same Dot Cards, display the card that illustrates $5 - 1$. Fold back one dot and guide the child in stating the subtraction sentence and finding the difference. Turn the card around to show $5 - 4$. Fold back the 4 dots and guide the child in stating the subtraction sentence and finding the difference. Elicit the idea that $5 - 1 = 4$ and $5 - 4 = 1$ are related subtraction sentences. Point out that these four related sentences are called a "family."

Families

1.



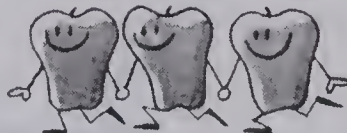
$$3 + 1 = \underline{\quad}$$

2.



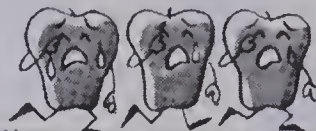
$$4 - 1 = \underline{3}$$

3.



$$1 + 3 = \underline{4}$$

4.



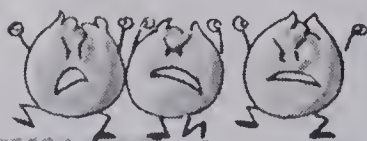
$$4 - 3 = \underline{1}$$

5.



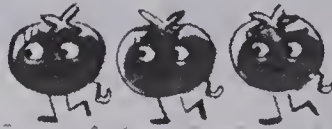
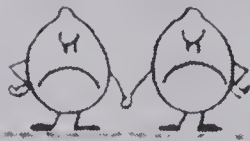
$$3 + 2 = \underline{5}$$

6.



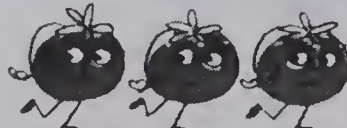
$$5 - 2 = \underline{3}$$

7.



$$2 + 3 = \underline{5}$$

8.



$$5 - 3 = \underline{2}$$

Introducing addition and subtraction families (one hundred five) 105

Using the Book Panel 1: Ask, "How many pineapples are dancing? (3) How many bananas are coming to join them? (1) How many things in all? (4)" read, "3 plus 1 equals what?" Have the child trace 4.

Panel 2: Ask, "How many in all? (4) How many bananas are leaving? (1) How many remain? (3)" Read, "4 minus 1 equals what?" Have the child write 3.

Panel 3: There is 1 onion, 3 peppers are coming. $1 + 3 = 4$.

Panel 4: There are 4 in all. 3 leave, and 1 remains. $4 - 3 = 1$. Have the child observe that the sentences in panels 1-4 are related. The numbers 3 and 1 are added. The sum is 4. Then from 4 the numbers 1 and 3 are subtracted.

Panel 5-8: These panels also show 4 related sentences. Elicit the idea that leaving (separating) is the undoing of coming (joining). Repeat the procedures of panels 1-4.

1.

1
+ 4
5

5
- 4
1

4
+ 1
5

5
- 1
4

0
+ 4
4

4
- 4
0

4
+ 0
4

4
- 0
4

3.

4
+ 2
6

6
- 2
4

2
+ 4
6

6
- 4
2

3
+ 2
5

5
- 2
3

2
+ 3
5

5
- 2
3

5.

1
+ 5
6

6
- 5
1

5
+ 1
6

6
- 1
5

106 (one hundred six) Practice families for 6

Using the Book Panel 1: Four related facts are shown. Read, "1 plus 4 equals what?" Have the child write 5. Then read "5 minus 4 equals what?" Have the child write 1. Point out the relationship between the two facts as shown in this diagram:



Then read, "4 plus 1 equals what?" Have the child write 5. Next read, "5 minus 1 equals what?" Have the child write 4. Point out the relationships between this pair of related addition and subtraction facts using a diagram.

Panels 2-5: Have the child complete the four related facts in each panel. Explain that these are families of facts.

ACTIVITIES

1. Duplicate a worksheet (or use the flannel board) with several panels, each showing 2 sets of objects (to sum 6). For example, show a set of 4 balls and a set of 2 bats and write the related addition and subtraction facts for this situation:

4
+ 2

6
- 2

2
+ 4

6
- 4

Have the child complete each problem.

2. Display Dot Set Cards, as described in the Activity Reservoir, sums 1 to 6. Challenge the child to write four related vertical problems for each set card.

3. Prepare a card which shows three numbers such that the third number will be the sum of the first two (to sum 6). Challenge the child to write related vertical addition and subtraction sentences for each card. For example, for 5, 1, 6, the children write:

5
+ 1
6

1
+ 5
6

6
- 1
5

6
- 5
1

4. See Bulletin Board Suggestion 2 in the Chapter Overview.

EXTRA PRACTICE

Have the child complete these families.

1.

2
+ 1
3

3
- 1
2

1
+ 2
3

3
- 2
1
2.

1
+ 3
4

4
- 3
1

3
+ 1
4

4
- 1
3
3.

2
+ 0
2

2
- 0
2

0
+ 2
2

2
- 2
0

OBJECTIVE

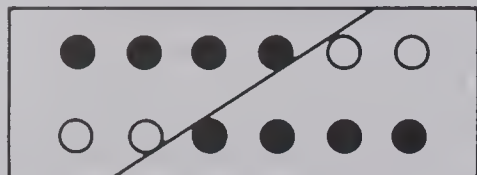
To add and subtract using related addition and subtraction facts, sums to 6

PACING

Level A 107 All (guided)
Level B 107 All (guided)
Level C 107 All (guided)

MATERIALS

two-row dot cards for sum 6 like:



BACKGROUND

See Background in the Chapter Overview.

SUGGESTIONS

Initial Activity Display the two-row dot card. Explain that the first row shows a set of 4 and 2 and the second row shows a set of 2 and 4. For the first row develop the sentences $4 + 2 = \underline{\quad}$ and $6 - 2 = \underline{\quad}$ and have the child complete the sentences. Develop $2 + 4 = \underline{\quad}$ and $6 - 4 = \underline{\quad}$ for the second row and have the child complete the sentences.

Write:

$$\begin{array}{rcl} 4 + 2 & = & 6 \\ 2 + 4 & = & 6 \end{array} \quad \begin{array}{rcl} 6 - 2 & = & 4 \\ 6 - 4 & = & 2 \end{array}$$

Elicit that the numbers in each sentence are 4, 2, and 6. Explain that the four sentences are related addition and subtraction sentences and we call this a family.

Next, turn the dot card vertically. Follow a procedure similar to the one above developing the related addition and subtraction facts:

$$\begin{array}{rcl} 2 & 6 & 4 & 6 \\ +4 & -4 & +2 & -2 \\ \hline 6 & 2 & 6 & 4 \end{array}$$

The 6 Family



$$4 + 2 = \underline{\quad}$$



$$6 - 2 = \underline{4}$$



$$2 + 4 = \underline{6}$$



$$6 - 4 = \underline{2}$$

5.

$$5 + 1 = \underline{6}$$

$$6 - 1 = \underline{5}$$

$$1 + 5 = \underline{6}$$

$$6 - 5 = \underline{1}$$

6.

$$\begin{array}{r} 6 \\ + 0 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ - 0 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 0 \\ + 6 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$$

7.

$$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$$



Families of facts for 6 (one hundred seven) 107

Using the Book Panel 1: Ask, "How many are picking tomatoes? (4) How many are coming? (2) How many people in all?" Read, "4 plus 2 equals what?" Have the child trace 6.

Panel 2: Ask, "How many in all? (6) How many are going away? (2) How many are left?" Read, "6 minus 2 equals what?" Have the child write 4.

Panels 3-4: Ask questions like those for panels 1 and 2. Point out that panels 1-4 show four related sentences and these can be viewed as a family of sentences. Help the child observe the order of the numbers added and the sum in each addition sentence. Use the pictures for $4 + 2$ and $2 + 4$ to show the same numbers. (6) "Is the sum the same? (yes) Why? (Because the numbers added are the same.)" Elicit that the related subtraction sentences begin with 6 and have the same other numbers.

Panel 5: Have the child make up a story and complete each sentence.

Panels 6-7: Have the child complete each pair of related addition and subtraction facts. Point out the relationship between each pair and explain that these are families of facts.

Extra Practice

1.
$$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 3 \\ - 3 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 2 \\ - 0 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 1 \\ - 1 \\ \hline 0 \end{array}$$
2.
$$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 3 \\ - 0 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$$
3.
$$\begin{array}{r} 4 \\ - 4 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$$


$$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 1 \\ - 0 \\ \hline 1 \end{array}$$
4.
$$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ - 0 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 2 \\ - 2 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$$
 
5.
$$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 2 \\ - 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 6 \\ - 0 \\ \hline 6 \end{array}$$
6.
$$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$$
7.
$$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5 \\ - 0 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4 \\ - 4 \\ \hline 0 \end{array}$$

AT HOME: Let the child answer some of these exercises aloud. Then write some exercises and let the child write the answers.

108 (one hundred eight) Extra Practice: Subtraction facts to 6

OBJECTIVE

To subtract from 6 or less, in vertical form

PACING

Level A All
Level B All
Level C All

MATERIALS

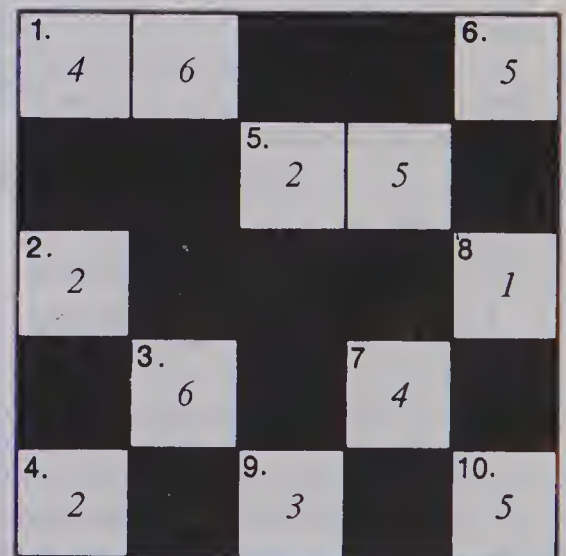
6 red blocks, 6 blue blocks

SUGGESTIONS

Initial Activity Show a group of 6 blue and a group of 3 red blocks. Ask, "How many more blue blocks than red blocks?" Have the child write the vertical subtraction problem and give the difference.

ACTIVITIES

1. Prepare this puzzle. The child should write only the answers. (Answers are included.)



Across

1. 4 tens + 6 ones
3. 3 + 3
5. two tens + five one
7. 2 + 2
9. 5 - 2

Down

2. 4 - 2
4. 6 - 4
6. 5 - 0
8. 6 - 5
10. 3 + 2

2. Have the child play Concentration, as described in the Activity Reservoir.

Using the Book Panels 1-7: Have the child subtract.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To review and maintain the following skills:

- To count by ones [82]
- To count by twos [87]
- To count by fives [89]
- To count by tens [77]

PACING

- Level A All (guided)
- Level B All (first row of 1, 2, 3, guided)
- Level C All (first row of 1, 2, guided)

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concepts are taught.

ACTIVITIES

1. Have the child use the Number Chart, as described in the Activity Reservoir, to count by ones to 50.
 2. To review place value, a worksheet with several examples, as shown below, may be provided
- | | |
|----------------|-----------------|
| 13 | 24 |
| 1 ten + 3 ones | 4 tens + 2 ones |
| 3 tens + 1 one | 2 tens + 4 ones |
3. Crossing the Stream may be played. Use the flannel board (or draw on chalkboard) to place numerals around strips of yarn that will represent water. The child is to "count the stones" in order to cross the stream. Have the child touch each stone as it is counted: 30, 32, 34, 36, 38...50.

Keeping Fit

1.



8 9 10 11



22 23 24 25



46 47 48 49



31 32 33 34

2.



20 25 30 35



30 35 40 45

3.



8 10 12 14



42 44 46 48



26 28 30 32

4.



40 50

Keeping Fit: Counting by 1's, 2's, 5's, and 10's to 50 (one hundred nine) 109

Using the Book Make sure the child realizes that each row begins new counting that does not continue from the row above. Tell the child that the hand at the beginning of the row means that new counting starts.

Panel 1: Have the child point to each numeral in order and say the name. Then have the child continue naming the numbers in the sequence as each blank is touched. The child is then to trace the first three numerals and then fill in the blanks in that row. Each row in panel 1 is counting by ones.

Panel 2: Counting by fives. Follow procedures similar to panel 1.

Panel 3: Counting by twos. Follow procedures similar to panel 1.

Panel 4: Counting by tens. Follow similar procedures.



1. $4 + 2 = \underline{6}$ $6 - 2 = \underline{4}$
 $2 + 4 = \underline{6}$ $6 - 4 = \underline{2}$

2.

$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$
$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ + 1 \\ \hline 2 \end{array}$
$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ + 2 \\ \hline 2 \end{array}$
$\begin{array}{r} 1 \\ + 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 6 \\ + 0 \\ \hline 6 \end{array}$

3.

$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$
$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$
$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 0 \\ \hline 5 \end{array}$
$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$

4.

How many more ?

$5 - 3 = \underline{2}$

5.

How many are left?

$4 \bigcirc 2 = \underline{2}$

110 (one hundred ten) Chapter 5 Test

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A All
 Level B All
 Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Give each child six blocks. Tell stories which involve addition and subtraction of sums 6 or less. Have the children use the blocks to dramatize the story. Then assist them in writing the appropriate number sentence and finding the sum or difference.

2. Have the child play Dot Cards as described in the Activity Reservoir. Include sums to 6.

3. The child should enjoy playing Bingo, as described in the Activity Reservoir, to review addition and subtraction facts through sum 6.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: The child is to complete the four related sentences. [page 107 A]

Panel 2: Have the child write each sum. [pages 97-98 B]

Panel 3: Have the child write each difference. [pages 99-100 C]

Panel 4: Have the child match members of the two sets and then complete the subtraction sentence. [page 103 D]

Panel 5: Have the child look at the picture to see what is happening. Then have the child write an operation sign in the ring and complete the number sentence. [page 95 E]

OBJECTIVE

To add sums to 6

PACING

Level A All
Level B All
Level C All

SUGGESTIONS

The purpose of this page is to provide experience in the type of format that may be used on standardized tests, and so is an optional lesson. Some children may do this page independently with guidance for instructions only. Use judgement as to whether certain children should be guided through some or all of the exercises. On standardized tests at this grade level, all directions are oral. The "Using the Book" section gives guidance for administering this page. Notice that the circles for answers are all arranged horizontally on these pages to give practice with this format. In filling in the circles make sure that the child presses down with the pencil to make a dark mark. Do not be concerned if the child does not fill in the circles exactly.

This page may be used in a diagnostic manner. Reteaching or extra practice may be necessary for those children who have difficulty with a particular skill. The chart below shows the page numbers where the skill was taught.

Skill	Page
sums to 5	43
sum 6	97

ACTIVITIES

On a large piece of tagboard, draw a picture of a beanstalk. On each leaf of the beanstalk write in a vertical addition, sums to 6. On another piece of tagboard create a similar beanstalk. Post the tagboard in 2 different places in the room. Create 2 teams. The first player of each team goes to the tagboard on the word "go". The first player of each team writes in the sum on the bottom leaf of their beanstalk. Then, the next player writes in the sum on the next beanstalk. This continues as each team tries to climb to the top of the beanstalk. The team finishing with the most correct answers wins. If both teams have all correct answers, the team finishing first wins.

Basic Skills Check Up

1.
 $4 + 2 =$
2 4 5 6
☐ ☐ ☐ ☒

2.
 $2 + 4$
5 6 7 8
☐ ☒ ☐ ☐

3.
 $2 + 3$
2 5 6 8
☐ ☒ ☐ ☐

4.
 $0 + 1$
1 3 5 6
☒ ☐ ☐ ☐

5.
 $4 + 1$
3 4 5 6
☐ ☐ ☒ ☐

6.
 $2 + 2 =$
0 4 5 6
☐ ☒ ☐ ☐

7.
 $3 + 3$
0 3 6 7
☐ ☐ ☒ ☐

8.
 $2 + 1$
1 3 4 7
☐ ☒ ☐ ☐

9.
 $6 + 0$
0 1 5 6
☐ ☐ ☐ ☒

10.
 $1 + 1$
0 2 4 5
☐ ☒ ☐ ☐

11.
 $3 + 2 =$
1 2 5 7
☐ ☐ ☒ ☐

12.
 $1 + 3$
1 2 4 5
☐ ☐ ☒ ☐

13.
 $2 + 2$
1 2 3 4
☐ ☐ ☐ ☒

14.
 $1 + 5$
1 5 6 7
☐ ☐ ☒ ☐

15.
 $5 + 0$
5 6 7 8
☒ ☐ ☐ ☐

Using the Book Panel 1: Direct the child to 4 plus 2. Ask, "4 plus 2 equals what number? (6)" Tell the child to look at the numbers below the example. Have the child find the number 6. Say, "Look at the circle below the 6. The circle that goes with the number 6 is filled in to show that this is the answer, 4 plus 2 equals 6." Have the child darken the circle over the grey screen.

Panel 2: Direct the child to 2 plus 4. Ask, "2 plus 4 equals what number? (6)" Tell the child to look at the numbers below. Have the child find the number 6. Say, "Fill in the circle below the number 6 to show your answer. 2 plus 4 equals 6."

Panels 3-15: Have the child add and fill in the correct circle to show the answer. Make sure the child understands how to indicate the correct answer. Then the child can proceed alone to finish the page. Some children may want to work out the answers on a separate sheet of paper.

Basic Skills Check Up

1. $6 - 2 =$ 1 3 4 7 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	6. $6 - 6 =$ 0 1 3 6 <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	11. $5 - 4 =$ 0 1 2 3 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
2. $5 - 0$ 1 5 6 7 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	7. $4 - 3$ 0 1 2 4 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	12. $6 - 5$ 1 3 5 6 <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3. $5 - 1$ 1 3 4 6 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	8. $1 - 1$ 0 1 2 5 <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	13. $6 - 3$ 0 1 3 6 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
4. $5 - 2$ 0 1 2 3 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	9. $4 - 2$ 1 2 5 6 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	14. $6 - 4$ 2 3 5 6 <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
5. $4 - 4$ 0 2 4 5 <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	10. $6 - 1$ 1 2 3 5 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	15. $5 - 3$ 0 1 2 6 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>

112 (one hundred twelve) Basic Skills: Subtraction Facts to 6

OBJECTIVE

To subtract from 6 and less

PACING

Level A All
Level B All
Level C All

SUGGESTIONS

The purpose of this page is to provide experience in the type of format that may be used on standardized tests, and so is an optional lesson. Some children may do this page independently with guidance for instructions only. Use judgement as to whether certain children should be guided through some or all of the exercises. On standardized tests at this grade level, all directions are oral. The "Using the Book" section gives guidance for administering this page. Notice that the circles for answers are all arranged horizontally on these pages to give practice with this format. In filling in the circles make sure that the child presses down with the pencil to make a dark mark. Do not be concerned if the child does not fill in the circles exactly.

This page may be used in a diagnostic manner. Reteaching or extra practice may be necessary for those children who have difficulty with a particular skill. The chart below shows the page numbers where the skill was taught.

Skill	Page
Subtracting from 5 or less	57
Subtracting from 6	99

ACTIVITIES

Use 2 sets of Basic Fact Practice cards, as described in the Activity Reservoir, for subtracting from 6 or less. Place each set on the chalkboard, one at each end of the chalkboard. Create two teams. At the word "go" the first player of each team goes to the chalkboard and picks up the first card of their set and writes the subtraction on the board. Then the player writes the difference. Each player of each team should get a turn. The team with the most correct answers wins. If both teams have all the answers correct, the team that finished first wins.

Using the Book Panel 1: Direct the child to 6 minus 2. Ask, "6 minus 2 equals what number? (4)" Tell the child to look at the numbers below the example. Have the child find the number 4. Say, "Look at the circle below the 4. The circle that goes with the number 4 is filled in to show that this is the answer, 6 minus 2 equals 4." Have the child darken the circle over the grey screen.

Panel 2: Direct the child to 5 minus 0. Ask, "5 minus 0 equals what number? (5)" Tell the child to look at the numbers below. Have the child find the number 5. Say, "Fill in the circle below the number 5 to show your answer. 5 minus 0 equals 5."

Panels 3-15: Have the child subtract and fill in the correct circle to show the answer. Make sure the child understands how to indicate the correct answer. Then the child can proceed alone to finish the page. Some children may want to work out the answers on a separate sheet of paper.

OBJECTIVE

To count by ones, twos, fives and tens

SUGGESTIONS

The purpose of this page is to provide experience in the type of format that may be used on standardized tests, and so is an optional lesson. Some children may do this page independently with guidance for instructions only. Use judgement as to whether certain children should be guided through some or all of the exercises. On standardized tests at this grade level, all directions are oral. The "Using the Book" section gives guidance for administering this page. Notice that the circles for answers are all arranged horizontally on these pages to give practice with this format. In filling in the circles make sure that the child presses down with the pencil to make a dark mark. Do not be concerned if the child does not fill in the circles exactly.

This page may be used in a diagnostic manner. Reteaching or extra practice may be necessary for those children who have difficulty with a particular skill. The chart below shows the page numbers where the skill was taught.

Skill	Page
ones	80
twos	87
fives	89
tens	82

ACTIVITIES

Have the children line up in a row of 10. Have each child count off starting with 1 and continue until 100 is reached.

You may use this activity for counting by twos, fives, and tens.

Basic Skills Check Up

1.

36373840

29323639

2.

21222425

20233132

3.

15161819

14161719

4.

46474850

42454849

5.

12131416

15172021

6.

22242830

21252636

7.

12141620

15161718

8.

5102025

15162030

9.

25303545

26303640

10.

10304050

20303536

Basic Skills: Counting (one hundred thirteen) 113

Using the Book Panel 1: Direct the child to the number pattern. Tell the child, "We are going to count by ones." Read, "36, 37, 38." Ask, "What number comes next? (39) Does 40 come after 39? (yes)" Make sure that each child verifies that 39 is the missing number. Say, "Look at the circle below the 39. The circle that goes with the number 39 is filled in to show that this is the answer, 36, 37, 38, 39, 40." Have the child darken the circle over the grey screen.

Panels 2-5: Have the child count by ones to find the missing number, and fill in the correct one. Make sure the child understands how to indicate the correct answer.

Panels 6-7: Have the child count by twos to find the missing number. Make sure the child understands how to indicate the correct answer.

Panels 8-9: Have the child count by fives to find the missing number, again, making sure he or she understands how to indicate the answer correctly.

Panel 10: Have the child count by tens to find the missing number.

Basic Skills Check Up



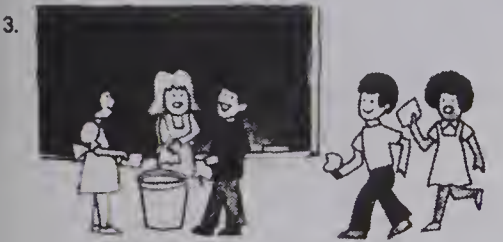
How many in all?

0 2 3 4
☐ ☐ ☒ ☐



How many in all?

1 3 5 6
☐ ☒ ☐ ☐



How many in all?

1 2 3 5
☐ ☐ ☐ ☒



How many are left?

1 3 4 5
☒ ☐ ☐ ☐



How many are left?

1 2 3 4
☐ ☒ ☐ ☐



How many are left?

1 2 4 5
☒ ☐ ☐ ☐

114 (one hundred fourteen) Basic Skills: Problem Solving

OBJECTIVE

To solve pictured problems using addition and subtraction

SUGGESTIONS

The purpose of this page is to provide experience in the type of format that may be used on standardized tests, and so is an optional lesson. Some children may do this page independently with guidance for instructions only. Use judgement as to whether certain children should be guided through some or all of the exercises. On standardized tests at this grade level, all directions are oral. The "Using the Book" section gives guidance for administering this page. Notice that the circles for answers are all arranged horizontally on these pages to give practice with this format. In filling in the circles make sure that the child presses down with the pencil to make a dark mark. Do not be concerned if the child does not fill in the circles exactly.

This page may be used in a diagnostic manner. Reteaching or extra practice may be necessary for those children who have difficulty with a particular skill. The chart below shows the page numbers where the skill was taught.

Skill	Page
addition	97
subtraction	99

ACTIVITIES

Have the children play Dot Set Cards as described in the Activity Reservoir.

Using the Book Panel 1: Direct the child to the picture. Say, "Let's make up a story about the picture. There are two children putting trash in the basket. One more child is coming to put trash in the basket. How many children are there in all? (3). 2 plus 1 equals 3." Direct the child to the numbers below the picture. Have the child find the number 3. Say, "Look at the circle below the 3. The circle that goes with the number 3 is filled in to show that this is the answer. Have the child darken the circle over the grey screen.

Panels 2-3: Have the child look at the picture and fill in the correct circle to show the answer. Make sure the child understands how to indicate the answer correctly. Let the child proceed to finish panels 2 and 3. Some children may want to work out the answers on a separate sheet of paper.

Panel 4: Direct the child to the picture. As in panel 1, say, "Let's make up a story about the picture. There are 3 children around a trash basket. Two are leaving. How many children are left? (1). 3 minus 2 equals 1." Direct the child to fill in the correct circle.

Panels 5-6: Have the child look at the picture and fill in the circle to show the answer.

CHAPTER 6 OVERVIEW

LEVEL 6

In this chapter addition and subtraction facts are extended to include sums 7 and 8. Related addition and subtraction sentences are also included. The art theme for this chapter is "Fairytales."

OBJECTIVES

- A To identify addition and subtraction names for the same number
- B To find sums for addition facts, sums 8 or less
- C To find differences for subtraction facts, from 8 and less
- D To write the appropriate operation sign and complete a number sentence to solve a pictured problem with a stated question

BACKGROUND

1. If a problem is about joining groups, addition is appropriate to solve the problem. If a problem is about removing (taking members away from a group), subtraction is appropriate to solve the problem. If two groups are being compared, subtraction is appropriate to find the difference.

2. There are many different names for a number. Because these sums and differences are 6, then $6 + 0$, $0 + 6$, $5 + 1$, $1 + 5$, $4 + 2$, $2 + 4$, $3 + 3$, $6 - 0$, $7 - 1$, and $8 - 2$ are all names for the number 6.

Basic Fact Practice Cards (See Activity Reservoir.)
 addition and subtraction cards and numeral cards
 15 bottle caps
 action picture involving sums to 8
 dot chart for sums 7 and 8 (See page 43.)
 two-row dot card for sum 7 (See the Initial Activity
 on page 127.)
 two-row dot card for sum 8 (See the Initial Activity
 on page 128.)
 blocks (8 of each color) red, blue, and green
 7 pieces of paper and 7 pencils
 8 boxes with tops

CAREER AWARENESS

Carpenters [133]

Carpenters work in practically every type of construction work there is. They put up the wood framework in buildings and houses, install windows, and other items such as doors, paneling, and cabinets. They build stairs and put down floors, as well as installing floor coverings, such as linoleum and asphalt tile. Carpenters use hammers, saws, chisels, and power tools.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that carpenters are responsible for the sound construction of most homes and buildings.

Photo description: The carpenter on the left has secured the wood with a clamp to free both his hands for using a hammer and chisel. The carpenter on the right checked that the legs of the table are even before gluing and bolting it together.

BULLETIN BOARD

1. The art in this chapter focuses on "Fairytale." For example pages 115 and 134 show fairytale characters familiar to the children. The children might enjoy creating a bulletin board about fairytales by making up their own characters and stories, as well as using those that are familiar to them.

2. Create a picture-graph bulletin board similar to the one on page 126. Have the children choose an activity they would enjoy graphing and assist them in collecting and sorting data. Through the creation of this bulletin board the children should discover the important value of graphs. This activity will encourage the children to look for patterns and relationships from which final generalizations can be made. Assist the children in creating problems similar to those in Panels 2-5 on page 126.

3. Make a chart called "Many Names For A Number." Have the children assist you in drawing 8 little fairytale characters. Write a numeral from 1 through 8 on each of the characters and place them across the top of the bulletin board.



Place all the different addition and subtraction names for the numbers 1 through 8 on cards. Place the cards in a plastic bag and tack it to the bulletin board. Guide the children in choosing and displaying all the different names for each number. You may wish to extend the chart at a later date to include 9 to 12 or more.

OBJECTIVES

To complete addition sentences for sum 7

To add, sums 7 or less, in vertical form

PACING

Level A All (1-2 guided)

Level B All (1-2 guided)

Level C All

MATERIALS

dot chart with a diagonal line, to show sum 7 (See page 43.)

SUGGESTIONS

Initial Activities 1. Using the dot chart described above, guide the child in writing the addition sentence for sum 7 that fits each row of dots.

2. Show addition sentences such as $3 + 4 = 7$ and $4 + 3 = 7$. Say that these are related addition sentences because they both use the numbers 4, 3, 7.

ACTIVITIES

1. Mix the addition sentences for sum 7 with the sum missing. Using the dot chart, guide the child in matching each sentence to the sets of dots and in naming the sum.

2. Write these addition sentences. The child can copy these on the next page in the Addition Book. See page 42.

$$7 + 0 = \quad 6 + 1 =$$

$$0 + 7 = \quad 1 + 6 =$$

$$5 + 2 = \quad 4 + 3 =$$

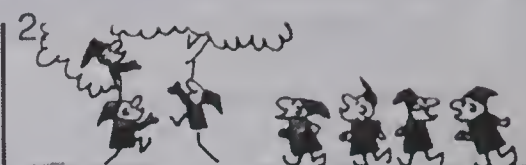
$$2 + 5 = \quad 3 + 4 =$$

3. Play Matching the Sum as described in the Activity Reservoir.

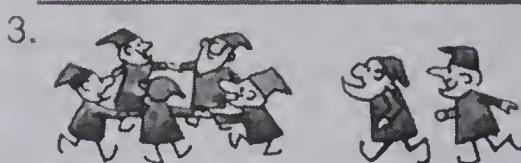
Seven



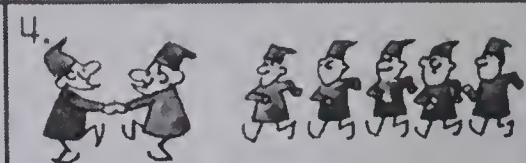
$$4 + 3 = 7$$



$$3 + 4 = 7$$



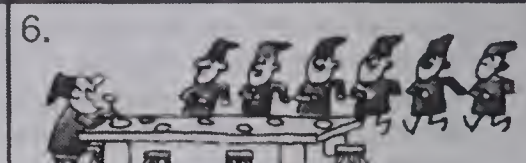
$$5 + 2 = 7$$



$$2 + 5 = 7$$



$$6 + 1 = 7$$



$$1 + 6 = 7$$



$$7 + 0 = 7$$



$$0 + 7 = 7$$

9.	5	3	3	2	0	1
	+ 2	+ 4	+ 3	+ 5	+ 7	+ 6
	<u>7</u>	<u>7</u>	<u>6</u>	<u>7</u>	<u>7</u>	<u>7</u>


Adding, sum 7 (one hundred fifteen) 115

Using the Book Panel 1: Say, "4 dwarfs are climbing the tree. 3 dwarfs are coming. How many altogether? (7)" Explain that the sets are being joined to make one set. Read, "4 plus 3 equals 7". Explain that 4 and 3 are addends or numbers added. You may have the child draw a line from 4 to the 4 dwarfs in the tree and from 3 to the 3 dwarfs coming. Point out that the sum or how many in all is 7 and have the child trace 7.

Panel 2: Have the child tell a story about this picture. Point out that the sets are the same as in the first picture but in a different order. Direct attention to $3 + 4 = \underline{\quad}$. Ask the child to draw a line from 3 to the 3 dwarfs in the tree and from 4 to the 4 dwarfs coming. Ask, "How many in all?" Have the child write the sum, 7. Read, "3 plus 4 equals 7." Explain that $4 + 3 = 7$ and $3 + 4 = 7$ are related sentences because the numbers are the same. The addends are in a different order. The sum is the same.

Panels 3-8: Follow procedures similar to panels 1 and 2.

Panel 9: Tell the child to find each sum.

1. $\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$
2. $\begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ + 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$
3. $\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 0 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 7 \\ + 0 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$
4. $\begin{array}{r} 1 \\ + 0 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$		$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$
5. $\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$
6. $\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$
7. $\begin{array}{r} 7 \\ + 0 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ + 6 \\ \hline 6 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$



116 (one hundred sixteen) Practice, addition facts to 7

Have the child cut pictures from magazines to make a "Sum 7 Book." Ask the child to paste down on blank paper sets of objects to show as many vertical addition facts for sum 7 as the child can think of. Remind the child to write the addition and give the sum.

EXTRA PRACTICE

Tell the child to add.

1. $\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array}$
2. $\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$
3. $\begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ + 0 \\ \hline 7 \end{array}$	$\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$

Using the Book Panels 1-7: Have the child add.

OBJECTIVES

To complete addition sentences, sum 8
To add, sums 8 or less, in vertical form

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All

MATERIALS

dot chart with a diagonal line, to show sum 8 (See page 43.)

SUGGESTIONS

Initial Activities 1. Using the dot chart described above, guide the child in writing the addition sentences for sum 8 that fit each row of dots.

2. Show pairs of addition sentences such as $3 + 5 = 8$ and $5 + 3 = 8$. Elicit the idea that these are related addition sentences.

ACTIVITIES

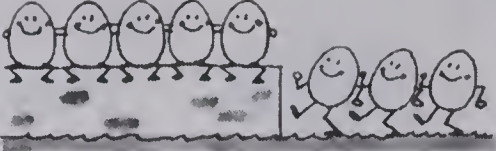



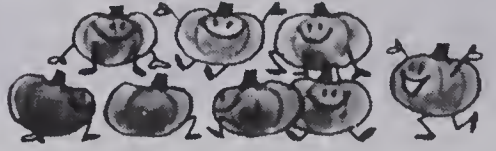


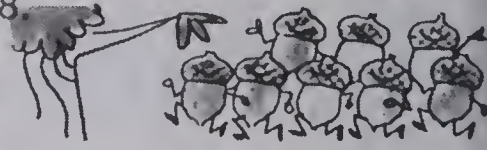
1. Mix the addition sentences for sum 8 with the sum missing. Using the dot chart, guide the child in matching each sentence to the sets of dots and in naming the sum.

2. Write these addition sentences. The child can copy these on the next page in the Addition Book. See page 42.

$8 + 0 =$	$7 + 1 =$
$0 + 8 =$	$1 + 7 =$
$6 + 2 =$	$5 + 3 =$
$2 + 6 =$	$3 + 5 =$
	$4 + 4 =$

3. Matching the sum may be played as described in the Activity Reservoir. Include sums through 8.

Eight

<p>1. </p> <p style="text-align: center;">$5 + 3 = \underline{8}$</p>	<p>2. </p> <p style="text-align: center;">$3 + 5 = \underline{8}$</p>												
<p>3. </p> <p style="text-align: center;">$6 + 2 = \underline{8}$</p>	<p>4. </p> <p style="text-align: center;">$2 + 6 = \underline{8}$</p>												
<p>5. </p> <p style="text-align: center;">$7 + 1 = \underline{8}$</p>	<p>6. </p> <p style="text-align: center;">$1 + 7 = \underline{8}$</p>												
<p>7. </p> <p style="text-align: center;">$8 + 0 = \underline{8}$</p>	<p>8. </p> <p style="text-align: center;">$0 + 8 = \underline{8}$</p>												
<p>9. <table style="display: inline-table; margin-right: 20px;"> <tr><td>3</td></tr> <tr><td>$\begin{array}{r} + 5 \\ \hline 8 \end{array}$</td></tr> </table> <table style="display: inline-table; margin-right: 20px;"> <tr><td>6</td></tr> <tr><td>$\begin{array}{r} + 2 \\ \hline 8 \end{array}$</td></tr> </table> <table style="display: inline-table; margin-right: 20px;"> <tr><td>0</td></tr> <tr><td>$\begin{array}{r} + 8 \\ \hline 8 \end{array}$</td></tr> </table> <table style="display: inline-table; margin-right: 20px;"> <tr><td>4</td></tr> <tr><td>$\begin{array}{r} + 3 \\ \hline 7 \end{array}$</td></tr> </table> <table style="display: inline-table; margin-right: 20px;"> <tr><td>7</td></tr> <tr><td>$\begin{array}{r} + 1 \\ \hline 8 \end{array}$</td></tr> </table> <table style="display: inline-table;"> <tr><td>1</td></tr> <tr><td>$\begin{array}{r} + 1 \\ \hline 8 \end{array}$</td></tr> </table> </p>		3	$\begin{array}{r} + 5 \\ \hline 8 \end{array}$	6	$\begin{array}{r} + 2 \\ \hline 8 \end{array}$	0	$\begin{array}{r} + 8 \\ \hline 8 \end{array}$	4	$\begin{array}{r} + 3 \\ \hline 7 \end{array}$	7	$\begin{array}{r} + 1 \\ \hline 8 \end{array}$	1	$\begin{array}{r} + 1 \\ \hline 8 \end{array}$
3													
$\begin{array}{r} + 5 \\ \hline 8 \end{array}$													
6													
$\begin{array}{r} + 2 \\ \hline 8 \end{array}$													
0													
$\begin{array}{r} + 8 \\ \hline 8 \end{array}$													
4													
$\begin{array}{r} + 3 \\ \hline 7 \end{array}$													
7													
$\begin{array}{r} + 1 \\ \hline 8 \end{array}$													
1													
$\begin{array}{r} + 1 \\ \hline 8 \end{array}$													

Adding, sum 8 (one hundred seventeen) 117

Using the Book Panel 1: Have the child describe the picture. Direct attention to and read, "5 plus 3 equals what?" You may have the child draw a line from 5 to the 5 eggs on the wall and from 3 to the 3 eggs coming. Ask, "How many in all?" Have the child trace 8.

Panel 2: The child may tell a story about this picture. Point out that the sets are the same as in the first picture but are in a different order. Direct attention to $3 + 5 = \underline{\quad}$. Ask the child to draw a line from 3 to the 3 eggs on the wall and from 5 to the 5 eggs coming. Ask, "How many in all?" Have the child write 8. Read, "3 plus 5 equals 8." Explain that $5 + 3 = 8$ and $3 + 5 = 8$ are related sentences because the same numbers are used. The numbers added are the same but in a different order. The sum is the same.

Panels 3-8: Follow procedures similar to panels 1 and 2. In panel 7, there are eight acorns hanging on the tree. Zero means no more acorns are coming to join them. In panel 8, zero means there are no acorns on the tree. Eight acorns are coming to the tree.

Panel 9: Have the child add.

$$\begin{array}{r} 1. \quad 6 \\ + 2 \\ \hline 8 \end{array} \quad \begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array} \quad \begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array} \quad \begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 2. \quad 2 \\ + 4 \\ \hline 6 \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array} \quad \begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array} \quad \begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array} \quad \begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$$

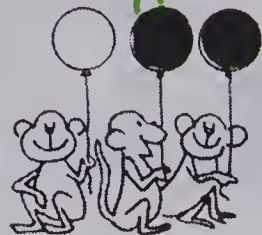
$$\begin{array}{r} 3. \quad 8 \\ + 0 \\ \hline 8 \end{array} \quad \begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array} \quad \begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array} \quad \begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4. \quad 1 \\ + 3 \\ \hline 4 \end{array} \quad \begin{array}{r} 1 \\ + 7 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array} \quad \begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ + 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 5. \quad 3 \\ + 5 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array} \quad \begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ + 1 \\ \hline 3 \end{array} \quad \begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array} \quad \begin{array}{r} 7 \\ + 0 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6. \quad 4 \\ + 4 \\ \hline 8 \end{array} \quad \begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array} \quad \begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array} \quad \begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 7. \quad 4 \\ + 3 \\ \hline 7 \end{array} \quad \begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array} \quad \begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array} \quad \begin{array}{r} 0 \\ + 4 \\ \hline 4 \end{array} \quad \begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$$



118 (one hundred eighteen) Practice, addition facts to 8

Using the Book Panels 1-7: Have the child add.

ACTIVITIES

1. Mix vertical addition facts for sum 8 with a sum missing. Using the dot chart turned vertically, assist the child in matching each addition fact to the set of dots and giving the sum.

2. Demonstrate addition situations using objects cut from construction paper for sum 8. Assist the child in writing the vertical addition to go with each problem and then giving the sum.

3. Write these addition facts. The child can copy these on the next page in the Addition Book. See page 47.

$$\begin{array}{r} 8 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 0 \\ + 8 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 2 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ + 6 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ + 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$$

4. You might have the child use the Basic Fact Wheels, as described in the Activity Reservoir for sums to 8.

5. Matching the Sum may be played as described in the Activity Reservoir using sums to 8.

6. Have a group of children dramatize an addition situation. Have other children write the vertical addition and the sum.

EXTRA PRACTICE

Tell the child to add.

$$\begin{array}{r} 1. \quad 2 \\ + 5 \\ \hline 7 \end{array} \quad \begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array} \quad \begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array} \quad \begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2. \quad 3 \\ + 5 \\ \hline 8 \end{array} \quad \begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array} \quad \begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array} \quad \begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array} \quad \begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 3. \quad 5 \\ + 1 \\ \hline 6 \end{array} \quad \begin{array}{r} 0 \\ + 4 \\ \hline 4 \end{array} \quad \begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array} \quad \begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 4. \quad 8 \\ + 0 \\ \hline 8 \end{array} \quad \begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array} \quad \begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$$

OBJECTIVES

To complete subtraction sentences for subtracting from 7
To subtract from 7 or less, in vertical form

PACING

- Level A All (1-2 guided)
- Level B All (1-2 guided)
- Level C All

MATERIALS

the dot chart described on page 115 with an X on each dot to the right of the diagonal line

SUGGESTIONS

- Initial Activities
- Using the dot chart described above, assist the child in writing the subtraction sentence that fits each row of dots.
 - Show pairs of subtraction sentences such as $7 - 3 = 4$ and $7 - 4 = 3$. Elicit the idea that these are related sentences because they use the numbers 4, 3, 7.

ACTIVITIES

- Mix the subtraction sentences (from 7) with the differences missing. Using the dot chart, guide the child in matching each sentence to the sets of dots and finding the difference.
- Write these subtraction sentences. The child can copy these on the next page in the Subtraction Book. See page 56.

$7 - 0 =$

$7 - 1 =$

$7 - 7 =$

$7 - 2 =$

$7 - 5 =$

$7 - 1 =$


$7 - 6 =$


$7 - 3 =$

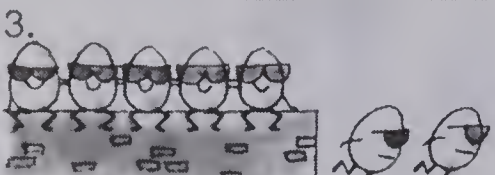
$7 - 4 =$

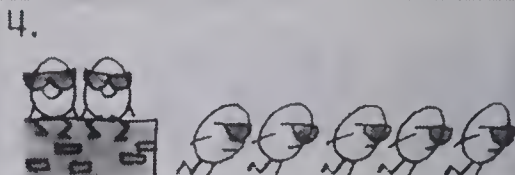
- Matching the Difference, as described in the Activity Reservoir, may be played, including from 7.

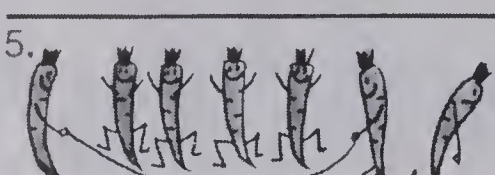
Subtracting from Seven

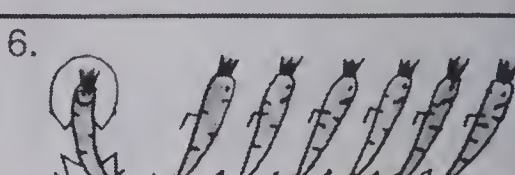
1.
$$7 - 3 = \underline{\quad}$$

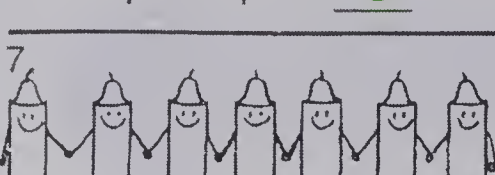
2.
$$7 - 4 = \underline{3}$$

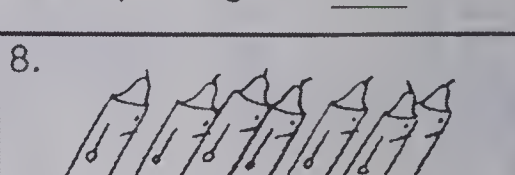
3.
$$7 - 2 = \underline{5}$$

4.
$$7 - 5 = \underline{2}$$

5.
$$7 - 1 = \underline{6}$$

6.
$$7 - 6 = \underline{1}$$

7.
$$7 - 0 = \underline{7}$$

8.
$$7 - 7 = \underline{0}$$

9.
$$\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$$

Subtracting from 7 (one hundred nineteen) 119

Using the Book Panel 1: Say, “7 socks in all. 3 socks are going away. How many are left? (4)” Explain that the set is being separated. Direct attention to and read, “7 minus 3 equals 4.” You may have the child draw a line from 3 to the 3 socks going away and from 4 to the socks staying. Explain that the numbers 7 and 3 are subtracted and the difference, or how many left, is 4. Have the child trace 4.

Panel 2: Have the child tell a story about this picture. Direct attention to $7 - 4 = \underline{\quad}$. You may have the child draw a line from 4 to the 4 leaving. Then the child can write the number of the other set (3) in the blank and draw a line to the set of 3 staying. Read, “7 minus 4 equals 3.” Explain that $7 - 3 = 4$ and $7 - 4 = 3$ are related subtraction sentences. Point out that the first sentence begins with 7, subtracts 3, and gets 4. The second sentence also begins with 7, but subtracts 4 and gets 3.

Panels 3-8: Continue in the same manner as in panels 1 and 2.

Panel 9: Tell the child to find each difference.

$$\begin{array}{r} 1. \quad 7 \\ - 4 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$$



$$\begin{array}{r} 2. \quad 2 \\ - 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$$



$$\begin{array}{r} 3. \quad 5 \\ - 3 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4. \quad 1 \\ - 0 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ - 7 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5. \quad 7 \\ - 6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ - 0 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 6. \quad 2 \\ - 2 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 7. \quad 7 \\ - 0 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ - 0 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ - 7 \\ \hline 0 \end{array}$$

120 (one hundred twenty) Practice, subtraction facts to 7

1. You may wish to create a coloring page similar to the one on page 102, using vertical subtraction facts to 7.

2. Have the child play Jigsaw Puzzle Cards, as described in the Activity Reservoir. You may divide the class into 2 teams and stage a relay race. The first team to complete the most correct puzzles wins.

EXTRA PRACTICE

Tell the child to subtract.

$$\begin{array}{r} 1. \quad 7 \quad 5 \quad 6 \quad 7 \quad 6 \\ - 4 \quad - 4 \quad - 2 \quad - 0 \quad - 3 \\ \hline 3 \quad 1 \quad 4 \quad 7 \quad 3 \end{array}$$

$$\begin{array}{r} 2. \quad 4 \quad 7 \quad 5 \quad 7 \quad 6 \\ - 4 \quad - 2 \quad - 3 \quad - 1 \quad - 5 \\ \hline 0 \quad 5 \quad 2 \quad 6 \quad 1 \end{array}$$

$$\begin{array}{r} 3. \quad 7 \quad 6 \quad 7 \quad 6 \quad 7 \\ - 3 \quad - 1 \quad - 5 \quad - 6 \quad - 6 \\ \hline 4 \quad 5 \quad 2 \quad 0 \quad 1 \end{array}$$

Using the Book Panels 1-7: Have the child subtract.

OBJECTIVES

To complete subtraction sentences for subtracting from 8

To subtract from 8 or less, in vertical form

PACING

Level A All (1-2 guided)

Level B All (1-2 guided)

Level C All

MATERIALS

the dot chart described on page 117, with an X on each dot to the right of the diagonal line

SUGGESTIONS

Initial Activities 1. Using the dot chart described above, assist the child in writing the subtraction sentence that fits each row of dots.

2. Show subtraction sentences such as $8 - 3 = 5$ and $8 - 5 = 3$. Elicit the idea that these are related subtraction sentences.

ACTIVITIES



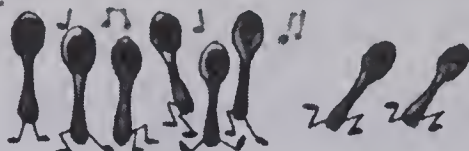
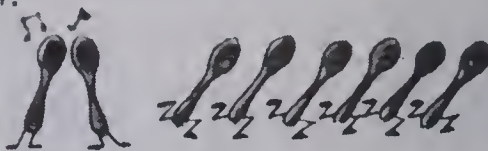
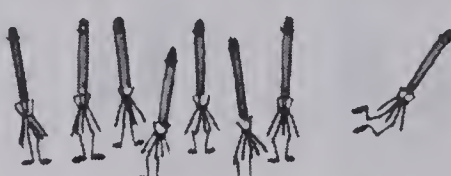

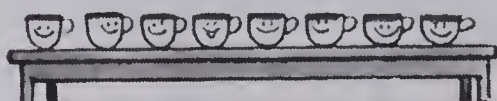

1. Mix the subtraction sentences, from 8, with the differences missing. Using the dot chart, the child matches each sentence to the sets of dots and finds the difference.

2. The child can copy these on the next page in the Subtraction Book. See page 56.

$8 - 0 =$	$8 - 1 =$
$8 - 8 =$	$8 - 7 =$
$8 - 2 =$	$8 - 3 =$
$8 - 6 =$	$8 - 5 =$
	$8 - 4 =$

3. Play Matching the Difference as described in the Activity Reservoir.

Subtracting from Eight

<p>1.</p>  <p>$8 - 3 = \underline{\quad}$</p>	<p>2.</p>  <p>$8 - 5 = \underline{3}$</p>						
<p>3.</p>  <p>$8 - 2 = \underline{6}$</p>	<p>4.</p>  <p>$8 - 6 = \underline{2}$</p>						
<p>5.</p>  <p>$8 - 1 = \underline{7}$</p>	<p>6.</p>  <p>$8 - 7 = \underline{1}$</p>						
<p>7.</p>  <p>$8 - 0 = \underline{8}$</p>	<p>8.</p>  <p>$8 - 8 = \underline{0}$</p>						
<p>9.</p> <table border="0"> <tbody> <tr> <td>$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$</td> <td>$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$</td> <td>$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$</td> <td>$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$</td> <td>$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$</td> <td>$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$</td> </tr> </tbody> </table>	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$	
$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$		


Subtracting from 8 (one hundred twenty-one) 121

Using the Book Panel 1: Say, "8 stars in all. 3 are flying away. How many are left? (5)" Direct attention to and read, "8 minus 3 equals what?" Have the child trace 5. You may have the child draw a line from 3 to the 3 stars flying away and from 5 to the 5 stars left.

Panel 2: The child may tell a story about this picture. Direct attention to $8 - 5 = \underline{\quad}$. You may have the child draw a line from 5 to the 5 stars flying away. Then the child can write the number of the other set (3) in the blank and draw a line to the 3 stars left. Read, "8 minus 5 equals 3." Explain that $8 - 3 = 5$ and $8 - 5 = 3$ are related subtraction sentences. Point out that the first sentence begins with 8, subtracts 3, and gets 5. The second sentence begins with 8, but subtracts 5, gets 3.

Panels 3-8: Follow procedures similar to panels 1 and 2.

Panel 9: Encourage the child to subtract without counting.

1.	$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$
2.	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 3 \\ - 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$
3.	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$	$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$
4.	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$				$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$
5.	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$
6.	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$
7.	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$

122 (one hundred twenty-two) Practice, subtraction facts to 8

Give the child 8 blocks. Then have the child demonstrate subtraction facts to 8. Challenge the child to write the subtraction in vertical form and to write the difference.

EXTRA PRACTICE

Tell the child to subtract.

1.	$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$
2.	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$
3.	$\begin{array}{r} 4 \\ - 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$
4.	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$

Using the Book Panels 1-7: Have the child subtract.

OBJECTIVE

To diagnose skill in adding and subtracting through sum 7

PACING

- Level A All
- Level B All
- Level C All

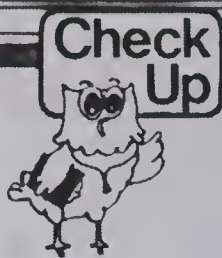
SUGGESTIONS

This page can be used to diagnose difficulties the child might have with sums to 7. The entire page need not be assigned in a single day. If preferred, you may test addition on one day and subtraction on another. On the basis of performance, you may want to provide individual help or additional remedial work for those children who have difficulty with a particular skill. The chart shows the page numbers to which the items and concepts apply.

Panel	Skill	Page
1 and 2	Sums 1 to 5	65
3	Sums 6 and 7	107, 115
4 and 5	Subtracting from 1 to 5	60
6	Subtracting from 6 and 7	108, 119

ACTIVITIES

1. The child can use the Jigsaw Puzzle Cards as described in the Activity Reservoir.
2. The child might mix vertical Basic Fact Practice Cards, as described in the Activity Reservoir, and study them individually. You might suggest an "I do know" pile for those answered correctly. If incorrect, the child should look at each complete fact and say it 3 times. Then this may be placed underneath the stack to try again.
3. Play Queen's Plate using basic facts to 7.



1.

1

+ 1

2

2

+ 1

3

0

+ 2

2

1

+ 2

3

3

+ 0

3

2.

1

+ 3

4

3

+ 2

5

0

+ 5

5

2

+ 2

4

1

+ 4

5

2

+ 3

5

3.

3

+ 3

6

2

+ 4

6

3

+ 4

7

1

+ 6

7

5

+ 2

7

4

+ 3

7

4.

1

- 1

0

2

- 1

1

1

- 0

1

3

- 1

2

3

- 3

0

3

- 2

1

5.

4

- 2

2

5

- 2

3

4

- 3

1

5

- 5

0

5

- 4

1

4

- 1

3

6.

7

- 6

1

6

- 3

3

7

- 3

4

6

- 4

2

7

- 2

5

6

- 1

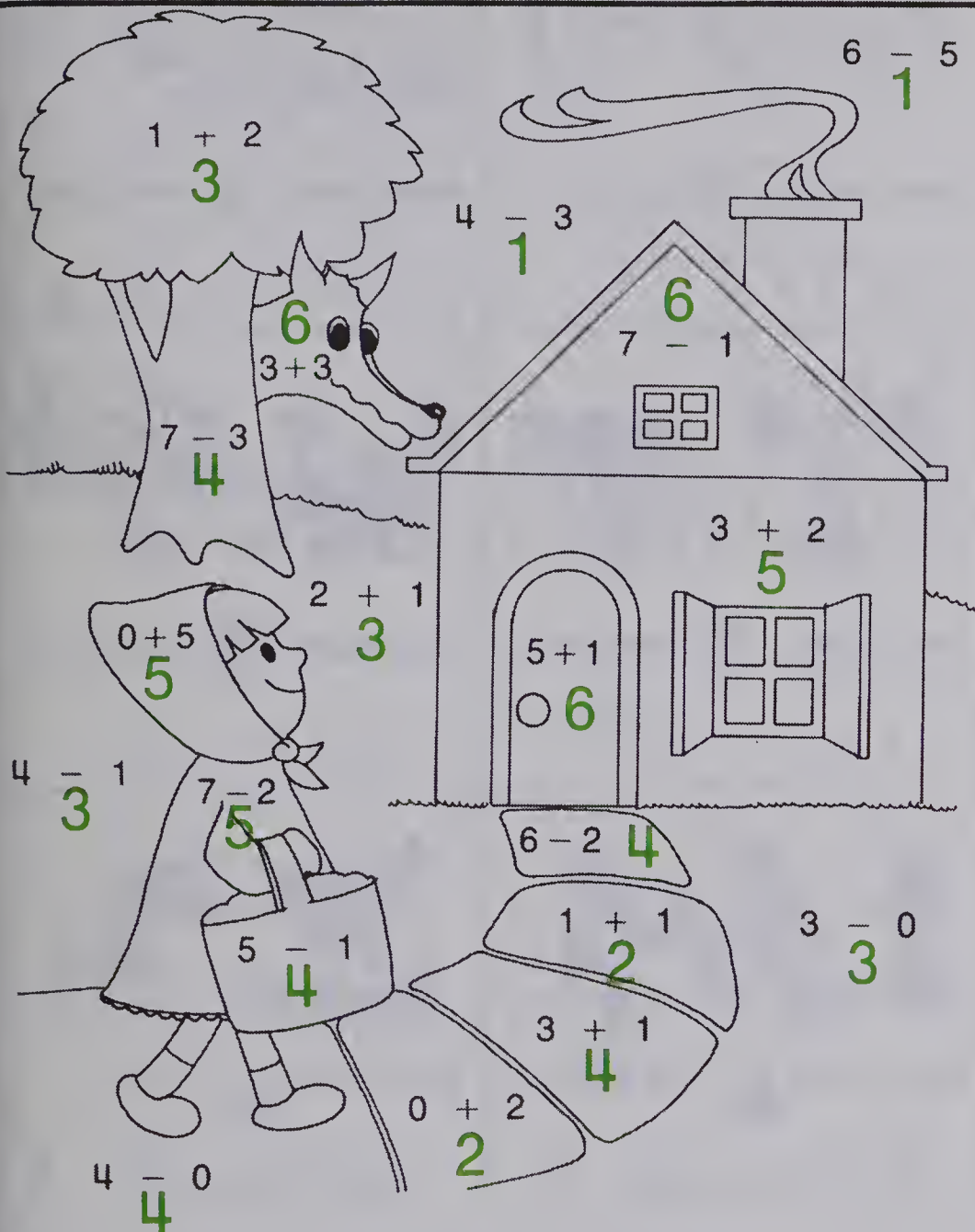
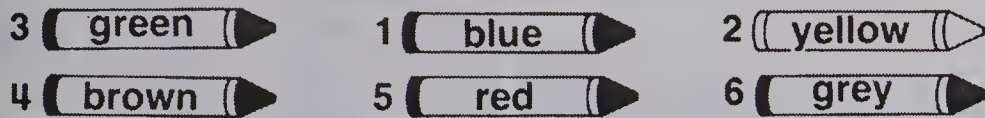
5

AT HOME: Read these exercises to the child. Have the child tell you the answers.

Diagnostic test through sum 7 (one hundred twenty-three) 123

Using the Book This is a mastery diagnostic page. (See Suggestions.) Encourage the child to write each sum or difference without counting.
Panels 1-3: Tell the child to add.
Panels 4-6: Tell the child to subtract.

Making a Picture



124 (one hundred twenty-four) Activity: Coloring by the numbers

Using the Book You may need to explain this activity to the child. Have the child look at the picture of a tree at the top left. Ask, "1 plus 2 equals what?" Tell the child to find the crayon that has 3 next to it. This is green, so the child colors the top of the tree green. Then read "7 minus 3 equals what?" Tell the child to find the crayon that has 4 next to it. This is brown, so the child colors the trunk of the tree brown. The child can then continue to work this way to color all things in the picture. Discuss the story pictured ("Little Red Riding Hood").

OBJECTIVE

To identify addition and subtraction names for 6 or less

PACING

Level A All
Level B All
Level C All

MATERIALS

index cards

SUGGESTIONS

Initial Activity Before doing this activity page, prepare some cards as shown below using sums to 6.

$2 + 4$	6
$6 - 1$	5

Mix the cards and have the child match them. Discuss that $2 + 4$ and 6 are names for the same number. Have the child point out all the cards that are names for the same number.

ACTIVITIES

1. You may provide addition and subtraction cards and mixed numeral cards for the child to match.

2. You may make a game board, showing a long walk and the house. Attach different combinations to the walk and to the door. You may provide small, different colored cutouts of the little girl and the wolf. Each child can choose to be one or the other. Each player continues to move one space toward the door, naming each number correctly. You may have two or more REST spaces on the walk, so others may have a turn. The game is to see which of each pair will get inside the house first.

3. You may have the child prepare a sheet of paper with numerals at the top. Have the child write as many addition and subtraction names for each number as the child can.

OBJECTIVE

To write + or - sign for a number sentence and complete the sentence (sums to 7)

PACING

Level A	125 All (1-4 guided)
	126 All (1 guided)
Level B	125 All (1-2 guided)
	126 All (1 guided)
Level C	125 All (1-2 guided)
	126 All

BACKGROUND

See Item 1 in the Chapter Overview Background.


SUGGESTIONS

Initial Activity Have some children dramatize the situation $2 + 5 = 7$. Write $2 \bigcirc 5 = \underline{\quad}$. Encourage the child to tell whether to add or subtract and then name the sum. Then have some children dramatize the situation $7 - 5 = 2$. Write $7 \bigcirc 5 = \underline{\quad}$. Have the child tell whether to add or subtract and then find the difference.

It's a Problem

1.



How many  in all?

$$2 \bigcirc 3 = \underline{\quad}$$

2.



How many  are left?

$$7 \bigcirc 4 = \underline{3}$$

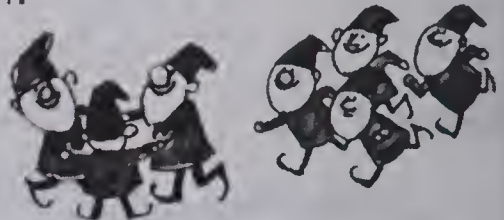
3.



How many  are left?

$$6 \bigcirc 3 = \underline{3}$$

4.




How many  in all?

$$3 \bigcirc 4 = \underline{7}$$

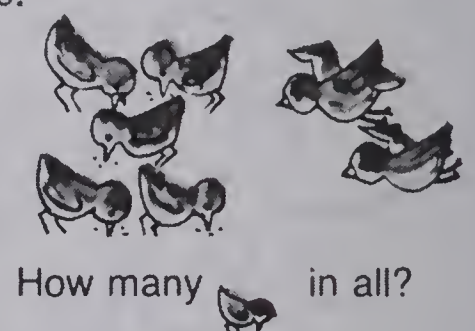
5.



How many  are left?

$$7 \bigcirc 5 = \underline{2}$$

6.



How many  in all?

$$5 \bigcirc 2 = \underline{7}$$

Deciding whether to add or subtract in a problem (one hundred twenty-five) 125

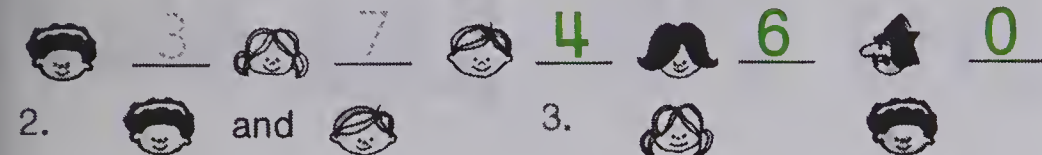
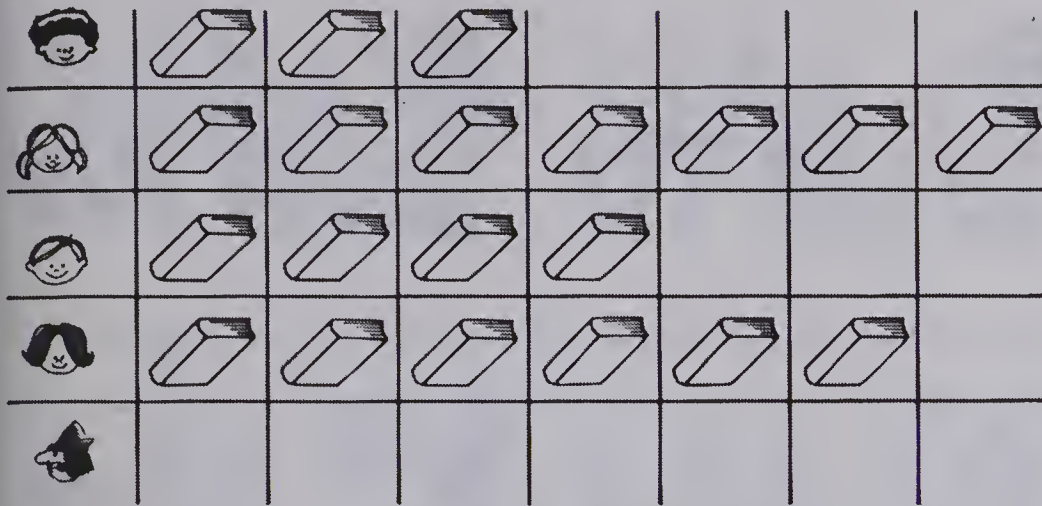
Using the Book Panel 1: Say, "2 cups are holding hands. 3 cups are coming." Read, "How many cups in all?" Tell the child that the picture of the cup in the sentence is not to be counted. Explain that adding numbers is a way to find a sum, or how many in all. Ask the child to trace the plus sign in the ring, and the sum, 5 in the blank. Have the child read $2 + 3 = 5$.

Panel 2: Modify procedures in panel 1 for subtraction. Explain that subtracting numbers is a way to find the difference, or how many are left.

Panels 3-6: Remind the child that, if some are going away, the question is "How many are left?" If some are coming, the question is "How many in all?"

Reading Is Fun


1.





How many  in all?

$$\underline{3} \bigcirc \underline{4} = \underline{7}$$

4.  and 



How many  in all?

$$\underline{6} \oplus \underline{0} = \underline{6}$$

How many more  for  ?

$$\underline{7} \bigcirc \underline{3} = \underline{4}$$

5.  and 

How many more  for  ?

$$\underline{6} \ominus \underline{4} = \underline{2}$$

126 (one hundred twenty-six) A picture graph: writing sentences to solve problems

Using the Book Panel 1: Explain that this is a picture graph about reading books. Each child pictured on the left has read the number of books pictured in the row. Have the child count the number of books each child and the elf has read.

Panel 2: Ask, "How many books has the first boy read?" Direct the child to find the boy's picture in panel 1 and count the number of books he read. (3) Then have the child trace the 3 under the boy's picture in panel 2. Follow the same procedure for the next boy and have the child trace the 4 under this boy's picture. Finally, read the question, "How many books in all?" Now ask which sign to write to find the sum, or how many in all? Tell the child to trace the $3 + 4$ and say "3 plus 4 equals what? (7)" Have the child trace the 7 which tells how many books were read in all.

Panels 3-5: Follow procedures similar to panel 2.

OBJECTIVE

To write addition and subtraction sentences to solve problems using a picture graph

PACING

Level A (Initial Activity only)

Level B (Initial Activity only)

Level C All (1-3 guided)

MATERIALS

13 toothpicks

BACKGROUND

See Item 1 in the Chapter Overview Background.

SUGGESTIONS

Initial Activity Give one child 3 toothpicks. Give another child 6 toothpicks and a third child 4 toothpicks. Proceed to ask questions similar to those on page 126. Draw a graph of this on the chalkboard similar to that on page 126. (Names can be used.) Ask the same questions but have the child read from the graph to answer.

ACTIVITIES

1. The child might benefit from using the Dot Set Cards to practice addition and subtraction to sum 7. Display Dot Set Cards. Let the child find the matching addition and related subtraction card for each, such as $2 + 5 = 7$, $7 - 5 = 2$.

2. Have the child create a graph on the flannel board (or chalkboard) and ask questions about it. Use the graph on page 126 as a sample. Have one child ask the questions and another child write the number sentences.

3. See Bulletin Board suggestion 2 in the Chapter Overview.

OBJECTIVES

To add and subtract using related addition and subtraction sentences, sum 7 or less

PACING

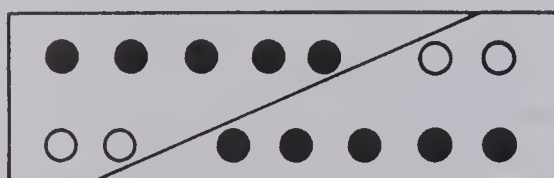
Level A 127 All (1-4 guided)
128 All
Level B 127 All (1-4 guided)
128 All
Level C 127 All (1-4 guided)
128 All

MATERIALS

two-row dot card as shown below

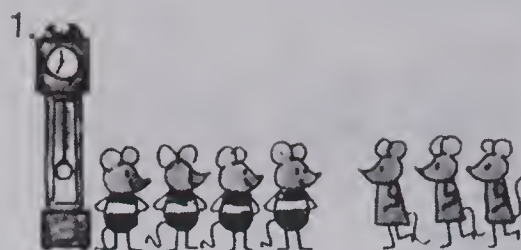
SUGGESTIONS

Initial Activity Display the following two-row dot card.

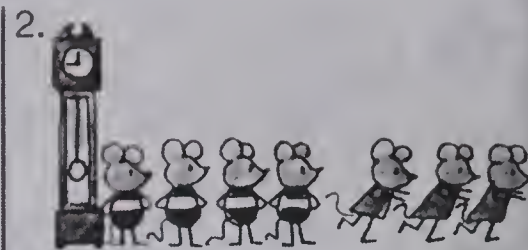


Explain that the first row shows a group of 5 and 2 and the second row shows a group of 2 and 5. For the first row develop the sentences $5 + 2 =$ and $7 - 2 =$ with the children and have them complete the sentences. Develop $2 + 5 =$ and $7 - 5 =$ for the second row and have them complete the sentences. Explain that the four sentences are related addition and subtraction sentences and they are called a family.

The 7 Family



$$4 + 3 = 7$$



$$7 - 3 = 4$$



$$3 + 4 = 7$$



$$7 - 4 = 3$$

$$5 + 2 = 7$$

$$7 - 2 = 5$$

$$2 + 5 = 7$$

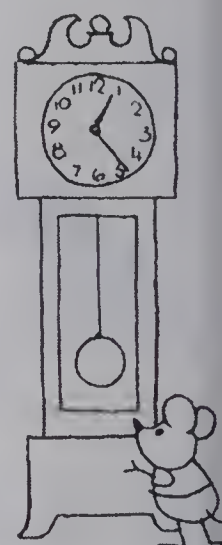
$$7 - 5 = 2$$

$$6 + 1 = 7$$

$$7 - 1 = 6$$

$$1 + 6 = 7$$

$$7 - 6 = 1$$



Related sentences for 7 (one hundred twenty-seven) 127

Using the Book Panel 1: Ask, "How many mice are standing by the clock? (4) How many are coming? (3) How many mice in all?" Read, "4 plus 3 equals what?" Have the child trace 7.

Panel 2: Ask, "How many mice in all? (7) How many mice are running away? (3) How many mice are left?" Read, "7 minus 3 equals what?" Have the child write 4.

Panels 3-4: Ask questions like those for panels 1 and 2. Point out that panels 1-4 show four related sentences. Help the child observe the order of numbers added and the sum in each addition sentence. Use the pictures to show that $3 + 4$ is the same as $4 + 3$. Ask, "Is the sum the same? (yes)"

Panels 5-6: Have the child complete the related sentences in each panel. You could have the child make up a story for each sentence.

The 8 Family



$$5 + 3 = \underline{8}$$



$$8 - 3 = \underline{5}$$



$$3 + 5 = \underline{8}$$



$$8 - 5 = \underline{3}$$

5. $6 + 2 = \underline{8}$

$8 - 2 = \underline{6}$

$2 + 6 = \underline{8}$

$8 - 6 = \underline{2}$

6. $0 + 8 = \underline{8}$

$8 - 8 = \underline{0}$

$8 + 0 = \underline{8}$

$8 - 0 = \underline{8}$

7. $4 + 4 = \underline{8}$

$8 - 4 = \underline{4}$



128 (one hundred twenty-eight) Related sentences for 8

OBJECTIVES

To add and subtract using related addition and subtraction sentences, sum 8 or less

To find sums, 8 or less, in vertical form

PACING

Level A 128 All (1-4 guided)

129 All

Level B 128 All (1-4 guided)

129 All

Level C 128 All (1-4 guided)

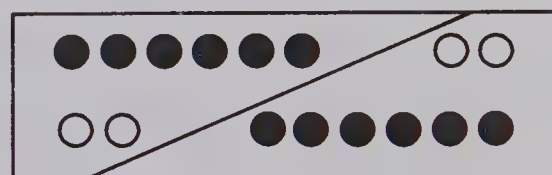
129 All

MATERIALS

two-row dot cards as shown below

SUGGESTIONS

Initial Activity Display the following two-row dot card.



Explain that the first row shows a group of 6 and 2 and the second row shows a group of 2 and 6. For the first row develop the sentences $6 + 2 =$ and $8 - 2 =$. Have the child complete the sentences. Develop $2 + 6 =$ and $8 - 6 =$ for the second row and have the child complete the sentences. Elicit the ideas that the numbers in each sentence are 6, 2, and 8; and the sum of the addends in either order is 8. Explain that the four sentences are related addition and subtraction sentences and are called a family.

Using the Book Panel 1: Ask, "How many elves are working? (5) How many are coming? (3) How many elves in all?" Read, "5 plus 3 equals what?" Have the child trace 8 on the line.

Panel 2: Ask, "How many elves in all? (8) How many elves are running away? (3) How many elves are left?" Read, "8 minus 3 equals what?" Have the child write 5.

Panels 3-4: Ask questions similar to those for panels 1 and 2. Tell the child that panels 1-4 show four related sentences. This is a family of four related sentences. Ask, "Why are they related? (Because all four sentences have the same numbers.)"

Panels 5-7: Have the child complete the related sentences in each panel. Encourage the child to use the first sentence in each pair to get the answer to the next sentence. Point out that for $4 + 4 = 8$ there is only one related subtraction, $8 - 4 = 4$ because the addends of the addition sentence are the same.

ACTIVITIES

1. Duplicate a worksheet with related addition and subtraction sentences for sums 8 or less. Encourage the child to use manipulative materials like blocks or disks to dramatize each set of related sentences.

2. See Bulletin Board suggestion 1 in the Chapter Overview.

3. The child might enjoy playing Matching the Sum/Difference as described in the Activity Reservoir.

4. Prepare a set of cards that show three numbers, such that the third number will be the sum of the first two for sum 8. Challenge the child to write related sentences for each card, such as 6, 2, 8.

$$\begin{array}{ll} 6 + 2 = 8 & 8 - 2 = 6 \\ 2 + 6 = 8 & 8 - 6 = 2 \end{array}$$

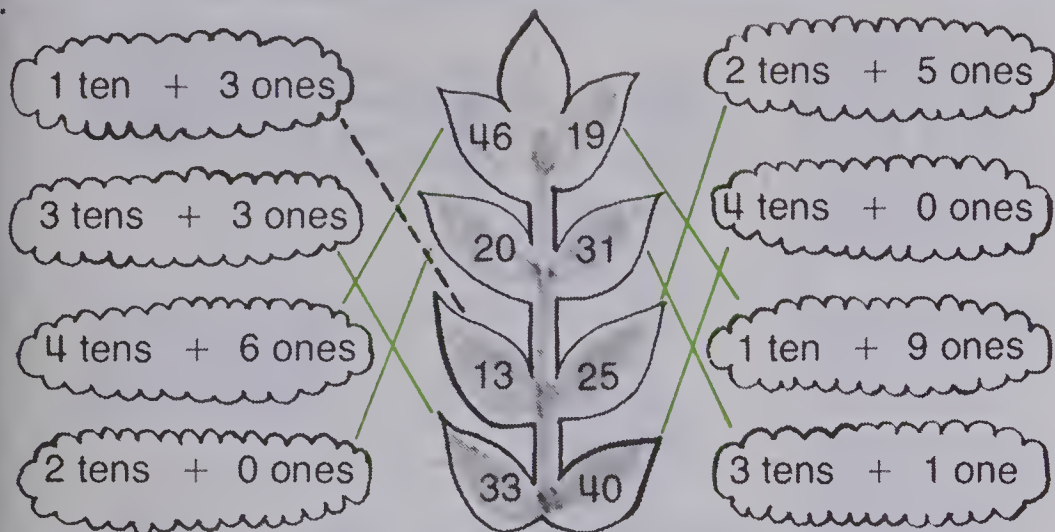
1.	$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$	$\begin{array}{r} 0 \\ + 6 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$
2.	$\begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ + 0 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$
3.	$\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$	$\begin{array}{r} 6 \\ - 0 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$	$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$
4.	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$
5.	$\begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ - 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 6 \\ + 0 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$
6.	$\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$

AT HOME: Choose any 2 rows of exercises to read to the child. Have the child give answers orally.

Practice (one hundred twenty-nine) 129

Using the Book Tell the child to find the sum or the difference. Remind the child to watch the sign to know whether to add or subtract.

1.



2.

_____ 49 50

_____ 40 50

3.

_____ 8 10

_____ 16 18 20

4.

_____ 20 25

_____ 40 45 50



130 (one hundred thirty) Keeping Fit: 2-digit numerals, counting by 1's, 2's, 5's, and 10's

OBJECTIVE

To review and maintain the following skills:

To match expanded and standard numerals [71]

To count by ones [81]

To count by tens [77]

To count by twos [87]

To count by fives [89]

PACING

Level A All (1-4 guided)

Level B All

Level C All

SUGGESTIONS

If the children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concepts are taught.

ACTIVITIES

1. The card game may be played for matching expanded numerals and two-digit numerals as described on page 72.

2. Have the child use the number chart, as described in the Activity Reservoir, to count by 2's, 5's, and 10's.

3. The child might enjoy creating a dot picture for practice counting by 2's from 30 to 50.

Using the Book Panel 1: Explain that the picture in the middle has standard numerals on the leaves. Direct attention to the first ear of corn. Read, "1 ten + 3 ones." Ask, "What is the standard numeral for this? (13)" Have the child trace the line to 13. Tell the child to draw a line from each expanded numeral to the appropriate standard numeral.

Panels 2-4: The child is to complete these number patterns. Tell the child that each time the pointing hand appears, a new counting pattern begins. Have the child trace the given numerals to determine the pattern and fill in the blanks.

OBJECTIVE

To write + or - sign for a number sentence and complete the sentence true, sums to 8

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All (1 guided)

MATERIALS

action pictures involving sums to 8

SUGGESTIONS

Initial Activities 1. Have the children dramatize situations for "How many in all? How many are left?"

2. Display action pictures involving sums to 8. Encourage the children to tell a story about each picture. Assist them in writing a number sentence to fit each story.

ACTIVITIES

1. You may duplicate a worksheet with exercises like: $5 \bigcirc 3 = 8$ and $8 \bigcirc 2 = 6$.

2. Have the child group objects as ducks or other animals on the flannel board. Challenge the child to tell a story about the picture asking the appropriate question. ("How many in all?" or "How many are left?") Have the child write a number sentence that fits the story.

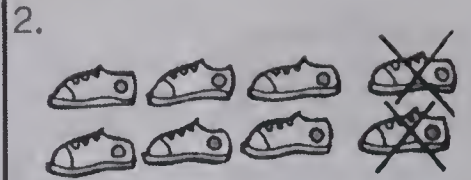
3. Give the child 8 red blocks and 8 blue blocks. Create comparison type problems similar to those in panels 5 and 6 on page 131. Assist the child in stating the number sentence that fits the problem.

Let's Take a Walk



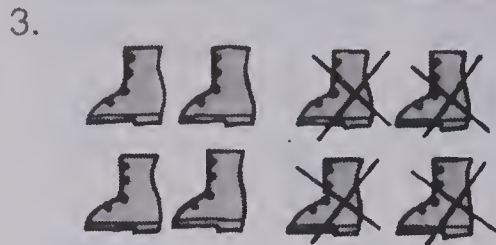
How many in all?

$$\underline{6} \bigcirc \underline{2} = \underline{8}$$



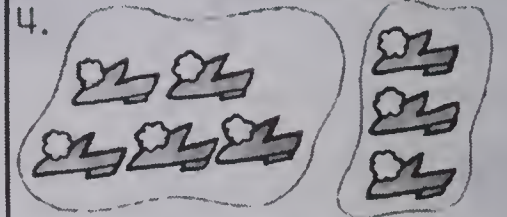
How many are left?

$$\underline{8} \ominus \underline{2} = \underline{6}$$



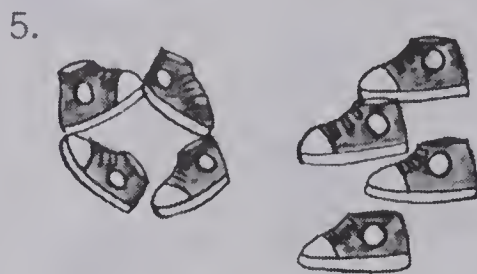
How many are left?

$$\underline{8} \ominus \underline{4} = \underline{4}$$



How many in all?

$$\underline{5} \oplus \underline{3} = \underline{8}$$



How many in all?

$$\underline{4} \oplus \underline{4} = \underline{8}$$



How many are left?

$$\underline{7} \ominus \underline{1} = \underline{6}$$

Writing sentences to solve problems (one hundred thirty-one) 131

Using the Book Panel 1: Ask, "How many boots in the first picture? (6) How many boots in the second picture? (2)" Read, "How many boots in all? (8)" Ask, "Do we add or subtract to find how many in all? (add)" Have the child trace the plus sign in the ring and then the sum, 8. Read " $6 + 2 = 8$."

Panel 2: Ask, "How many tennis shoes? (8) How many are crossed out with X marks? (2)" Read, "How many tennis shoes are left? (6)" Ask, "Do we add or subtract to find how many are left? (subtract)" Have the child trace the minus sign in the ring and then the difference, 6. Read, " $8 - 2 = 6$."

Panels 3-6: Remind the child that if some are taken away, the question is "How many are left?" If the sets are being joined, the question is "How many in all?"

Keeping Fit

1.

15 13

14 20

24 22

36 41

34 43

2.

18 15

38 48

18 24

46 47

32 23



<p>3.</p> $\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$ $\begin{array}{r} 6 \\ + 0 \\ \hline 6 \end{array}$ $\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	<p></p> $\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$ $\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$ $\begin{array}{r} 6 \\ + 2 \\ \hline 8 \end{array}$	<p></p> $\begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array}$ $\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$ $\begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array}$
<p>4.</p> $\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$ $\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$ $\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$	<p></p> $\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$ $\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$ $\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$	<p></p> $\begin{array}{r} 3 \\ - 1 \\ \hline 2 \end{array}$ $\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$ $\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$

132 (one hundred thirty-two) Keeping Fit: Comparing numbers; addition and subtraction through sum 8

OBJECTIVE

To review and maintain the following skills:

To decide which of two numbers is greater [83]

To decide which of two numbers is less [85]

To add in vertical form to sum 8 [117]

To subtract in vertical form from 8 or less [121]

PACING

Level A All (1 guided)

Level B All

Level C All

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lesson where the concept is taught.

ACTIVITIES

1. Jigsaw Puzzles, as described in the Activity Reservoir, may be played.

2. The child might enjoy playing Stop the Magician, as described in the Activity Reservoir, to review addition and subtraction facts to sum 8.

3. Battle, as described in the Activity Reservoir, may be played. The child holding the card for the number that is greater (or less) gets both cards.

Using the Book Guide the child to observe that Flub Blub is holding a block with an 8 on it in one hand and a block with a 4 on it in the other. Ask, "Which number is greater? (8) Which number is less? (4)"

Panel 1: Direct attention to the two blocks at the top. Ask, "Which is greater, 15 or 13?" Have the child trace the ring around 15. Then the child is to ring the numeral of the greater number on the blocks below.

Panel 2: Ask, "Which is less, 18 or 15?" Have the child trace the ring around 15. Then the child is to ring the numeral of the lesser number on the blocks below.

Panel 3: Tell the child to add.

Panel 4: Tell the child to subtract.

ACTIVITIES

1. Have the child use blocks to create comparison type situations such as "How many more red blocks?"

2. You might have the child use building blocks to make a table and thus demonstrate a carpenter's career.

3. Prepare this puzzle. The child should write only the answers. (Answers are included.)

1. 4	2		5. 8
		6. 7	
2. 4		5	8. 2
	3. 3		7. 8
4. 7		9. 2	10. 7

Across

1. 4 tens + 2
3. 7 - 4
5. 5 + 3
7. 4 + 4
9. 7 - 5

Down

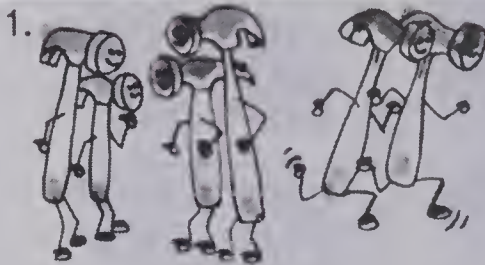
2. 8 - 4
4. 3 + 4
6. 7 tens + 5
8. 8 - 6
10. 7 + 0

4. You might have children cut pictures out of magazines of objects that a carpenter would make.

5. Have the child use the flannel board to create different situations appropriate for "How many more?" or "How many in all?" questions. Challenge the child to write the appropriate addition or subtraction sentence for each problem.

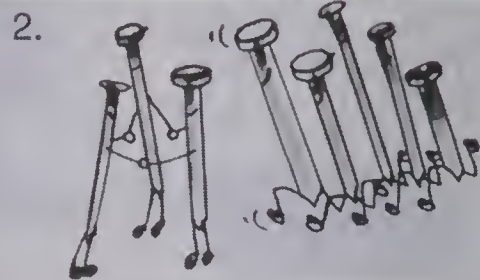
6. Assist the child in collecting pictures (from magazines) of the tools a carpenter would use.

Carpenters



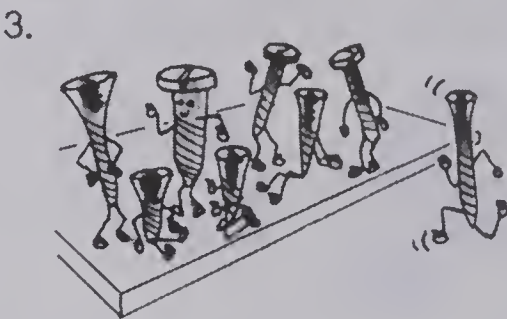
How many are left?

$$\underline{6} \bigcirc \underline{2} = \underline{4}$$



How many in all?

$$\underline{3} \oplus \underline{5} = \underline{8}$$



How many in all?

$$\underline{7} \oplus \underline{1} = \underline{8}$$



How many are left?

$$\underline{8} \ominus \underline{3} = \underline{5}$$

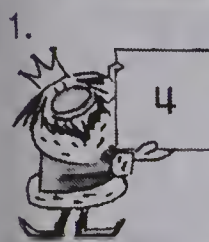
Practice (one hundred thirty-three) 133

Using the Book Discuss the picture at the top of the page. The child can tell about tools carpenters use in building. See Career Awareness in the Chapter Overview.

Panel 1: Ask, "How many hammers in all? (6) How many are running away? (2)" Read the question, "How many are left? (4)" Stress that we subtract to find how many are left. The child can trace the minus sign. Say that the subtraction sentence must begin with the number in all. Relate 6 to the number of hammers running away and have the child trace this. Say, "6 minus 2 equals what?" Have the child write 4.

Panels 2-4: If needed, you may continue to guide the child in a similar manner to write the other number sentences.

THINK!


1.  $3 + 1$ $4 + 2$ $6 - 2$ $8 - 4$
 $5 - 1$ $7 - 3$ $0 + 4$ $2 + 2$

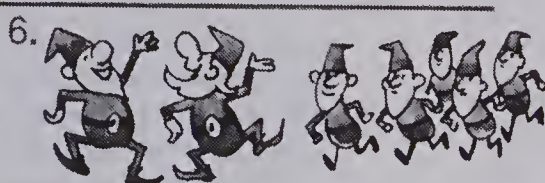
2. $4 + 4 = 8$
 $8 - 4 = 4$


3. $\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$ $\begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array}$ $\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$
 $\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$ $\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$ $\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$

4. $\begin{array}{r} 7 \\ - 7 \\ \hline 0 \end{array}$ $\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$ $\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$
 $\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$ $\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$ $\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$




How many  are left?
 $4 - 2 = 2$



How many  in all?
 $2 + 5 = 7$



How many more  ?
 $7 - 3 = 4$

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A 2-6
 Level B 2-6
 Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Have the child play Queen's Plate as described in the Activity Reservoir. Use vertical form exercises, sums to 6.

2. Give the children eight blocks and ask them to separate them into two sets in as many ways as they can. Then challenge them to write all the names for eight.

3. Write items like:

8 7 6 3 8
 5 3 2 4 8
 3 4 8 7 0
 (-) (-) (+) (+) (-)

The child writes the appropriate sign (+ or -) to the left of each second number.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: Have the child ring each name for 4. [pages 115-123 A]

Panel 2: Tell the child to complete these sentences. [pages 115-123 B]

Panel 3: Tell the child to add. [pages 115-117 C]

Panel 4: Tell the child to subtract. [pages 119-121 D]

Panel 5-7: Have the child look at each picture and then read the question. Then have the child write the sign in the ring and complete the sentence that fits the picture. [pages 126, 131 E]

CHAPTER 7 OVERVIEW

LEVEL 7

The numbers 51 through 100 are introduced in this chapter. Counting to 100 and comparing two-digit numerals are presented. Telling time on the hour is introduced. The art theme of this chapter is "Transportation."

OBJECTIVES

- A To identify two-digit numerals, given expanded numerals
- B To write the number that comes just after or just before a given number
- C To know the basic facts through sum 8
- D To recognize and complete counting patterns by 1's and 10's
- E To tell time to the hour
- F To draw the hour hand to show the time

VOCABULARY

just after 147
just before 148
time 151
o'clock 151

BACKGROUND

1. The numbers fifty-one through 100 are developed in this chapter. In expanded numerals such as 5 tens + 2 ones, the word ones is unnecessary by this time, so the child may simply use 5 tens + 2.

Number names such as 5 tens + 2 and 50 + 2 are called expanded numerals. In two-digit numerals such as 52, the digit 2 is in the ones place and the digit 5 is in the tens place.

2. There are two important understandings about 100. It is the number which is one more than 99 and it means 10 tens.

The numeral 100 stands for 1 hundred, 0 tens, and 0 ones.

3. An important part of learning to tell time is the association of daily activities with particular times of the day. It is also important to associate the meaning of one hour with the time spent in doing a particular thing, as reading, for one hour. Time on the half hour is presented in grade 2 after the meaning of half is well developed.

MATERIALS

10 full ten-boxes
10 empty ten-boxes (or rubber bands)
100 blocks (or toothpicks)
numeral and ten(s) + one(s) cards (1-100)
3 paper towel tubes
30 paper cups
expanded numeral cards, as 2 tens + 9 and 20 + 9
flannel board, yarn, and cutouts (or magnetic board)
number chart and numeral tags (See the Activity Reservoir.)
100 disks
demonstration clockface
paper plates
cardboard
paper fasteners
action pictures for sum 8 or less
numeral cards for 0-100

SPECIAL NOTES

The use of color on ten-boxes and single blocks is used in two ways as an aid to understanding place value. 1) In all place value lessons each color represents a different place in a numeral. For example, in 4 tens + 8, 4 ten-boxes for the tens place are all one color; and 8 single blocks for the ones place are all another color. 2) In lessons on comparing numbers each number is represented by a different color. For example, in comparing 84 and 48, boxes and blocks for 84 are all one color; and boxes and blocks for 48 are all another color.

BULLETIN BOARD

1. The art theme of this chapter focuses on "Transportation." The children should enjoy creating a bulletin board using the theme. Lead a discussion about transportation. Have the children draw pictures and write stories about their favorite forms of transportation. Some children might like to construct vehicles like cars, boats, trains, or airplanes out of clay or wood. These models may be displayed on a table.

2. The Numeral Chart described in Chapter 4 (see Bulletin Board suggestion 3 in the Chapter 4 Overview) may be extended to include the numerals through 99.

3. Assist the children in creating a story about the activities they do at different hours of the day. For example:

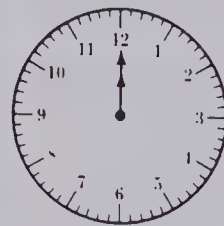
We arrive at school at



We go to recess at



We have lunch at



OBJECTIVE

To write expanded and two-digit numerals, 50 or less

PACING

- Level A 135 All (1-3guided)
- Level B 135 All (1-2 guided)
- Level C 135 All (1-2 guided)

MATERIALS

2 empty ten-boxes, 14 blocks, numeral cards, word cards (ten(s) + one(s))

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Give the child 14 blocks and an empty ten-box. Guide the child in counting the number of blocks and showing 1 ten + 4 ones.

Ask, "What is the number of single blocks?" Explain that we say four and not four ones to name the number of single blocks. Remove the word ones from the expanded numeral derived above to show 1 ten + 4. Have the child display the two-digit numeral 14 below the expanded numeral 1 ten + 4. Review the meaning of each digit.

ACTIVITIES

1. Place several expanded numeral cards for 5 tens and less, as 3 tens + 2, 2 tens + 5, 2 tens + 3, and 5 tens + 2, along the chalkboard. Give the child some mixed numeral cards, as 32, 25, 23, 52. Have the child match each of these to its correct expanded numeral.

2. Duplicate a worksheet of matching exercises (for 50 or less) similar to the following:

2 tens + 0	23
4 tens + 1	32
3 tens + 2	24
2 tens + 3	41
2 tens + 4	20

3. Adapt the game Bingo as described in the Activity Reservoir. Place expanded numerals in the cells. Call out the two-digit numeral.

4. Have the child play Concentration as described in the Activity Reservoir. A match would be 4 tens + 2 and 42.

Two-Digit Numerals

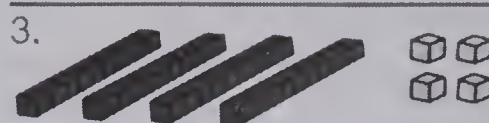


___ tens + ___



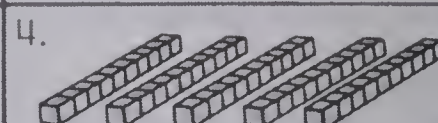
3 tens + 0

30



4 tens + 4

44



5 tens + 0

50

5.

3 tens + 0 =	<u>30</u>
3 tens + 1 =	<u>31</u>
3 tens + 2 =	<u>32</u>
3 tens + 3 =	<u>33</u>
3 tens + 4 =	<u>34</u>

6.

4 tens + 6 =	<u>46</u>
4 tens + 7 =	<u>47</u>
4 tens + 8 =	<u>48</u>
4 tens + 9 =	<u>49</u>
5 tens + 0 =	<u>50</u>

Reviewing place value (one hundred thirty-five) 135


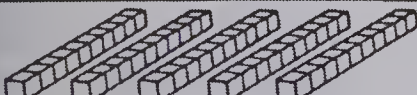


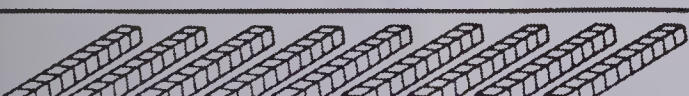
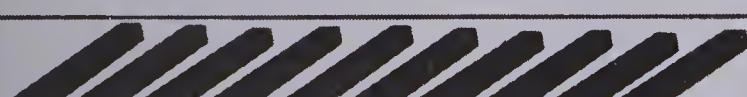
Using the Book Panel 1: Ask, "How many ten-boxes? (2) How many single blocks? (9)" Have the child trace the 2 and 9. Then have the child trace the 29 below. You may have the child draw a line from 2 tens to 2 in the tens place and another line from 9 to 9 in the ones place. Read, "Twenty-nine."

Panel 2: Ask, "How many ten-boxes? (3)" Have the child write 3 in front of the word tens. Then ask, "How many single blocks? (0)" Have the child write 0 on the second blank. Read, "3 tens + 0" and have the child repeat it. Then have the child write 3 on the left side of the last blank and 0 on the right. Read, "Thirty." Explain that 30 is the same as 3 tens + 0. Have the child draw a line from the 3 to 3 tens and from the 0 to 0.

Panels 3-4: Follow procedures similar to panel 2.

Panels 5-6: Direct the child to read each expanded numeral and then write the standard numeral in the blank. Have the child read each standard numeral.

Counting by Tens

1.		<u>1</u> ten	10
2.		<u>2</u> tens	20
3.		<u>3</u> tens	30
4.		<u>4</u> tens	40
5.		<u>5</u> tens	50
6.		<u>6</u> tens	60
7.		<u>7</u> tens	70
8.		<u>8</u> tens	80
9.		<u>9</u> tens	90
10.		<u>10</u> tens	100

136 (one hundred thirty-six) Order of tens through 100

Using the Book Panel 1: Direct attention to the ten-box. Read, "1 ten" and then the numeral "10." Review that it means 1 ten + 0 ones. Have the child trace the numerals.

Panel 2: Ask, "How many ten-boxes? (2)" Review that the short or standard numeral for 2 tens is 20. Point out that it means 2 tens plus 0 ones and 20 is read, "twenty."

Panel 3: Ask, "How many ten-boxes? (3)" Ask the child to write the standard numeral for 3 tens. Point out that it means 3 tens plus 0 ones and 30 is read, "thirty."

Panels 4-10: Direct the child to look at each picture, write how many tens, and then write the standard numeral through 90. Have the child read the numerals in order to 100 in the pink column.

OBJECTIVE

To count by tens to one hundred

PACING

Level A 136 All (1-3 guided)
Level B 136 All (1-3 guided)
Level C 136 All (1-2 guided)

MATERIALS

10 full ten-boxes, numeral cards for 10-100, word cards for 10-90

BACKGROUND

See Item 2 in the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display one ten-box and have the child show the appropriate word and numeral cards. Continue in this manner until there are nine ten-boxes in the set. Point to each ten-box in the group and guide the child in counting by tens from 10 through 90.

Put in another ten-box. Explain that 10 tens is 100. Stress that 100 is ten more than 90. Show the numeral card for 100.

ACTIVITIES

1. Display the numeral cards for 10 through 90 in random order. Challenge the child to arrange them in order from 10-90.

2. Have the child use the Number Chart, as described in the Activity Reservoir, to count by tens.

3. Have the child play Concentration as described in the Activity Reservoir. A match would be 3 tens and 30.

4. Play a ring-toss game. Fasten a paper towel tube in an upright position on a board. Also cut out 9 cardboard rings and write the numeral 10 on each. The child will toss the rings. Since each ring is worth 10 points they compute their scores counting by tens.

5. The tens, as on page 153, may be shown in order on the mini-calculator as 10, 20, 30, 40, etc.

OBJECTIVE

To write expanded numerals (20 + 4) and two-digit numerals for the numbers 50 or less

PACING

- Level A 137 All (1-3 guided)
- Level B 137 All (1-2 guided)
- Level C 137 All (1 guided)

MATERIALS

5 full ten-boxes, numeral cards to 50, word cards (ten(s) + one(s))

SUGGESTIONS

Initial Activities 1. Display 25 blocks. Use 2 sets of 10 and 5 more. Ask the student what the two-digit numeral is for 2 tens. Then emphasize the 20 + 5 form and its relationship to the other numerals.

2. Display 5 full ten-boxes. Using the numeral and word cards, show the expanded numeral 5 tens + 0.

Write: +

Assist the child in completing the expanded numeral (30 + 2 form) and the two-digit numeral. Point out the digits in each numeral.

ACTIVITIES

1. Have the child demonstrate each situation with manipulatives such as toothpicks. A matching worksheet similar to the following might be provided (for 50 or less).

10 + 4	26
20 + 6	49
10 + 8	18
40 + 9	14
30 + 0	30

2. The following may be prepared as an individual worksheet or used as a group activity at the chalkboard. The child is to match each numeral in the center column with the appropriate numeral in the other columns. Match each with two other names.

3 tens + 5	18	30 + 5
1 ten + 8 ones	27	10 + 8
5 tens + 3 ones	35	50 + 3
2 tens + 7 ones	53	20 + 7
2 tens + 4 ones	31	30 + 1
3 tens + 1 one	13	40 + 2
4 tens + 2 ones	24	10 + 3
1 ten + 3 ones	42	20 + 4

Writing Numerals



$$\underline{20} + \underline{0}$$

$$\underline{20}$$



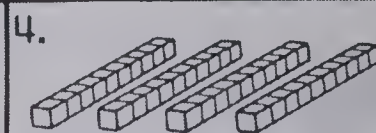
$$\underline{20} + \underline{4}$$

$$\underline{24}$$



$$\underline{30} + \underline{9}$$

$$\underline{39}$$



$$\underline{40} + \underline{0}$$

$$\underline{40}$$

5.

20 + 0 =	<u>20</u>
20 + 1 =	<u>21</u>
20 + 2 =	<u>22</u>
20 + 3 =	<u>23</u>
20 + 4 =	<u>24</u>

6.

30 + 6 =	<u>36</u>
30 + 7 =	<u>37</u>
30 + 8 =	<u>38</u>
30 + 9 =	<u>39</u>
40 + 0 =	<u>40</u>

Expanded and standard numerals (one hundred thirty-seven) 137

Using the Book Panel 1: Ask, "How many blue ten-boxes? (2) How many single blocks? (0)" Relate 20 + 0 and have the child trace the numerals. Then have the child draw a line from 2 to 2 in tens place and from 0 to 0 in ones place. Read, "Twenty" and have the child repeat it and trace the numeral.

Panel 2: Guide the child to look at this picture to see 2 tens and 4. Remind the child that 2 tens is written 20. Then have the child complete the expanded numeral and write the standard numeral below it. Read, "Twenty-four" and have the child repeat it.

Panels 3-4: The child is to look at each picture, complete the expanded numeral, and write the standard numeral.

Panels 5-6: Direct the child to read the expanded numeral and write the standard numeral for each. Have the child read each standard numeral.

Fifty through Sixty

1.	5 tens + 0	$\underline{50} + \underline{0}$	50
2.	5 tens + 1	$\underline{50} + \underline{1}$	51
3.	5 tens + 2	$\underline{50} + \underline{2}$	52
4.	5 tens + 3	$\underline{50} + \underline{3}$	53
5.	5 tens + 4	$\underline{50} + \underline{4}$	54
6.	5 tens + 5	$\underline{50} + \underline{5}$	55
7.	5 tens + 6	$\underline{50} + \underline{6}$	56
8.	5 tens + 7	$\underline{50} + \underline{7}$	57
9.	5 tens + 8	$\underline{50} + \underline{8}$	58
0.	5 tens + 9	$\underline{50} + \underline{9}$	59
1.	6 tens + 0	$\underline{60} + \underline{0}$	60

138 (one hundred thirty-eight) Order of numbers 50 through 60

OBJECTIVES

To write expanded and two-digit numerals in order from 50-60

To complete number sequences by 1's to 60

PACING

Level A 138 All (1-3 guided)
139 All

Level B 138 All (1-2 guided)
139 All

Level C 138 All (1-2 guided)
139 All

MATERIALS

6 empty ten-boxes, 60 blocks, numeral cards 50-60, word cards (ten(s) + one(s))

SUGGESTIONS

Initial Activity Display the expanded numeral 5 tens + 0. Display the ten-boxes and blocks. Challenge the child to illustrate 5 tens + 0 using the blocks. Guide the child in showing the standard numeral (50). Ask questions about the digits in each numeral. Follow this procedure through 60.

Using the Book You may explain that expanded numerals are written in order on the post signs from 5 tens + 0, 5 tens + 1, 5 tens + 2, on to 5 tens + 9 and then 6 tens + 0.

Panels 1-3: Direct the child to trace each across as, "5 tens + 0, 50 + 0, 50." Now trace, "5 tens + 1" and "50 + 1." Tell the child to write 5 in the tens place and 1 in the ones place. Read, "Fifty-one." Then trace, "5 tens + 2" and "50 + 2." Ask the child to write the standard numeral. Read, "Fifty-two." Have the child read the numerals.

Panels 4-11: Ask the child to read each expanded numeral on the left, then write another expanded numeral, and finally write each standard numeral on the right. When finished, ask the child to begin with 50 and read each standard numeral in order to 60.

ACTIVITIES

1. Distribute the numeral cards for 49 through 60. Place the following chart on the bulletin board.

50 + 1	50 + 4	60 + 0	50 + 6
40 + 9	50 + 2	50 + 8	50 + 0
50 + 3	50 + 9	50 + 7	50 + 5

For each expanded numeral ask, "Who has the two-digit numeral that names the same number?" Tack the cards to the board as they are found. Whoever uses all his or her cards first wins.

2. Have the child use the Number Chart, as described in the Activity Reservoir, to count from 1-60.

3. Display 60 beans in a jar. Have the child estimate how many and count them by ones. Then challenge the child to group and count them by tens.

KEEPING FIT

OBJECTIVE

To review and maintain the following skills:

To add in vertical form, sum 6 [99] and sum 7 [115]

To subtract in vertical form, from 6 [108] and from 7 [119]







PACING

Level A All
Level B All
Level C All

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lesson where the concept is taught.

1.

	8	9	10	11	12	13	14	15
	34	35	36	37	38	39	40	41
	21	22	23	24	25	26	27	28
	49	50	51	52	53	54	55	56
	12	13	14	15	16	17	18	19
	53	54	55	56	57	58	59	60

Keeping Fit

2.	4	0	2	2	3	1
	+ 3	+ 5	+ 5	+ 4	+ 3	+ 6
	7	5	7	6	6	7

3.	7	6	6	7	5	7
	- 2	- 6	- 3	- 4	- 3	- 6
	5	0	3	3	2	1

Practice • Keeping Fit: Adding and subtracting, sums 5-7 (one hundred thirty-nine) 139

Using the Book Panel 1: The child is to count by 1's to write the missing numerals in each row. Guide the child to complete the first row of numerals from 8 to 15 tracing the given numerals. Then the child should look at each of the other rows of numerals and write the missing numerals in each. Explain that every time the hand appears that means a new sequence is starting and the child must watch for a new pattern. Have the child read each row after completing it.

Panel 2: Tell the child to add.

Panel 3: Tell the child to subtract.

Sixty through Seventy

1.	6 tens + 0	$60 + 0$	60
2.	6 tens + 1	$60 + 1$	61
3.	6 tens + 2	$60 + 2$	62
4.	6 tens + 3	$60 + 3$	63
5.	6 tens + 4	$60 + 4$	64
6.	6 tens + 5	$60 + 5$	65
7.	6 tens + 6	$60 + 6$	66
8.	6 tens + 7	$60 + 7$	67
9.	6 tens + 8	$60 + 8$	68
10.	6 tens + 9	$60 + 9$	69
11.	7 tens + 0	$70 + 0$	70

140 (one hundred forty) Order of numbers 60 through 70

OBJECTIVE

To write expanded and two-digit numerals in order from 60 to 70

PACING

Level A All (1-3 guided)
 Level B All (1-2 guided)
 Level C All (1 guided)

SUGGESTIONS

Initial Activity Adapt the Initial Activity on page 138 to illustrate the numerals 60 to 70.

ACTIVITIES

1. Have the child play Concentration as described in the Activity Reservoir. A match would be $50 + 5$ and 55.
2. Adapt Queen's Plate as described in the Activity Reservoir. Have 2 children each alternate counting to 70. When one child misses the other advances a furlong.
3. Adapt Bingo as described in the Activity Reservoir. Fill the cells with $30 + 3$ and call out the two-digit numerals.

Using the Book You may call attention to the expanded numerals written in order on the post signs from 6 tens + 0, 6 tens + 1, 6 tens + 2, on to 6 tens + 9, and then 7 tens + 0.

Panels 1-3: Read, "6 tens + 0, 60 + 0, 60." Have the child trace the given numerals. Then read, "6 tens + 1." Have the child trace the given numerals. Tell the child to write 6 in the tens place and 1 in the ones place. Read, "Sixty-one." Then read, "6 tens + 2." Ask the child to complete the expanded numeral $60 + 2$. Finally, tell the child to write 6 in the tens place and 2 in the ones place. Read, "Sixty-two."

Panels 4-11: Ask the child to read each expanded numeral on the left, then write another expanded numeral, and finally write each standard numeral on the right. When finished, ask the child to begin with 60 and read each standard numeral in order to 70.

OBJECTIVES

To write expanded and two-digit numerals in order from 70 to 80
To complete number sequences by 1's to 80

PACING

Level A 141 All (1-2 guided)
142 All (1 guided)
Level B 141 All (1 guided)
142 All
Level C 141 All
142 All

MATERIALS

2 paper towel tubes, 18 paper cups, expanded numeral cards for $70 + 0$ to $80 + 0$, standard numeral cards for 70-80

SUGGESTIONS

Initial Activity Using the 2 paper tubes, paint one red and label it "tens" and paint the other blue and label it "ones." Fasten them in an upright position on a board. Using the paper cups, cut around the top of each cup, 1 inch from the rim, to make 18 rings. Label eight rings with the numeral "10" and label ten rings with the numeral "1." Have the child illustrate 7 tens + 0 by placing 7 rings labeled "10" on the red tube. Then have the child show the expanded numeral and standard numeral cards. Follow this procedure to develop the expanded and two-digit numerals for 71 to 80. When introducing the numeral 80, you may have the child put 7 rings on the tens tube and 10 rings on the ones tube (7 tens + 10). Lead the child to discover that ten ones can be exchanged for one ten ring to make 8 tens.

Seventy through Eighty

1.	7 tens + 0	$70 + 0$	70
2.	7 tens + 1	$70 + 1$	71
3.	7 tens + 2	$70 + 2$	72
4.	7 tens + 3	$70 + 3$	73
5.	7 tens + 4	$70 + 4$	74
6.	7 tens + 5	$70 + 5$	75
7.	7 tens + 6	$70 + 6$	76
8.	7 tens + 7	$70 + 7$	77
9.	7 tens + 8	$70 + 8$	78
10.	7 tens + 9	$70 + 9$	79
11.	8 tens + 0	$80 + 0$	80

Order of numbers 70 through 80 (one hundred forty-one) 141

Using the Book You may call attention to the expanded numerals written in order on the post signs from 7 tens + 0, 7 tens + 1, 7 tens + 2, on to 7 tens + 9 and then 8 tens + 0.

Panels 1-3: Read, "7 tens + 0, 70 + 0, 70." Have the child trace the numerals. Then read, "7 tens + 1" and "70 + 1." Have the child trace the given numerals. Tell the child to write 7 in the tens place and 1 in the ones place. Read, "Seventy-one." Then read, "7 tens + 2." Ask the child to complete the expanded numeral 70 + 2. Finally, tell the child to write 7 in the tens place and 2 in the ones place. Read, "Seventy-two."

Panels 4-11: Ask the child to read each expanded numeral on the left. Then write another expanded numeral and finally, write each standard numeral on the right. When finished, ask the child to start with 70 and read each standard numeral to 80.

1.

28 29 30 31 32 33 34

46 47 48 49 50 51 52 53 54

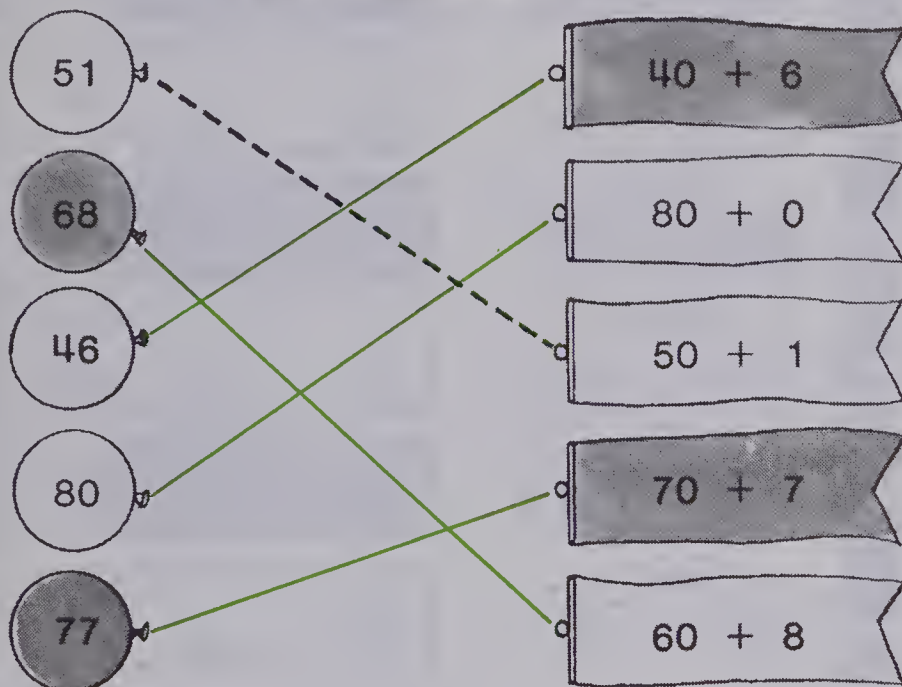
65 66 67 68 69 70 71 72 73

50 51 52 53 54 55 56 57 58

72 73 74 75 76 77 78 79 80



2.



142 (one hundred forty-two) Practice

ACTIVITIES

1. See Bulletin Board suggestion 1 in the Chapter Overview.

2. The game of Mail Carrier may be played. Use a set of expanded numeral cards and a set of two-digit numeral cards for 80 and less. The mail carrier is given the expanded numeral cards. The two-digit numeral cards are each placed on "houses" (desks) of other players. The mail carrier must find the matching card for each house. If incorrect the person who lives in the "house" becomes the mail carrier.

3. The child might enjoy playing the following detective game. On a worksheet scatter the numerals from 1 to 80. Write one number twice. To play this game, the child finds the number "1" and circles it, the number "2" and circles it, then "3" and so on through "80". When finished circling all the numbers from 1 to 80, the child will find one number that was not circled. This is the "crook."

Using the Book Panel 1: The child is to count by ones to write the missing numerals in each row. Guide the child to complete the first row of numerals from 28 to 34, tracing the given numerals. The child should look at each of the other rows of numerals and write the missing numerals in each. Explain that the hand at the beginning of each row starts a new sequence. Have the child read each row after completing it.

Panel 2: Have the child read the number in the first balloon. (51) Then ask the child to find the expanded numeral for 51 on one of the flags. (50 + 1) Have the child trace over the dashed line from the balloon to the flag. Tell the child to read each standard numeral on the balloon and find the expanded numeral on one of the flags. Have the child draw a line from the balloons to the corresponding flags.

OBJECTIVES

To write expanded and two-digit numerals in order from 80 to 90

To complete number sequences by 1's to 90

PACING

Level A 143 All (1-2 guided)
144 All (1-2 guided)

Level B 143 All
144 All

Level C 143 All
144 All

MATERIALS

2 paper towel tubes, 19 paper cups, expanded numeral cards for $80 + 0$ to $90 + 0$, standard numeral cards for 80-90

SUGGESTIONS

Initial Activity Adapt the procedures described in the Initial Activities on page 141 to develop the expanded and two-digit numerals for 80 through 90.

Eighty through Ninety

1.	8 tens + 0	$\underline{80} + \underline{0}$	80
2.	8 tens + 1	$\underline{80} + \underline{1}$	81
3.	8 tens + 2	$\underline{80} + \underline{2}$	82
4.	8 tens + 3	$\underline{80} + \underline{3}$	83
5.	8 tens + 4	$\underline{80} + \underline{4}$	84
6.	8 tens + 5	$\underline{80} + \underline{5}$	85
7.	8 tens + 6	$\underline{80} + \underline{6}$	86
8.	8 tens + 7	$\underline{80} + \underline{7}$	87
9.	8 tens + 8	$\underline{80} + \underline{8}$	88
10.	8 tens + 9	$\underline{80} + \underline{9}$	89
11.	9 tens + 0	$\underline{90} + \underline{0}$	90

Order of numbers 80 through 90 (one hundred forty-three) 143

Using the Book You may call attention to the expanded numerals written in order on the post signs from 8 tens + 0, 8 tens + 1, 8 tens + 2, on to 8 tens + 9 and then 9 tens + 0.

Panels 1-2: Read, "8 tens + 0, $80 + 0$, 80." Have the child trace the numerals. Then read, "8 tens + 1." Ask the child to complete the expanded numeral $80 + 1$. Finally, tell the child to write 8 in the tens place and 1 in the ones place. Read, "Eighty-one."

Panels 3-11: Ask the child to read each expanded numeral on the left. Then write another expanded numeral and finally write each standard numeral on the right. When finished, ask the child to start with 80 and read each standard numeral to 90.

1.

38

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48

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50

51

52

69

70

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72

73

74

75

76

77

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57

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59

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61

62

63

64

72

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

2.

	tens	ones
57 =	5	7
66 =	6	6
80 =	8	0
88 =	8	8
79 =	7	9
32 =	3	2

3.

tens	ones	
6	2	= 62
1	4	=
3	5	=
2	2	=
6	3	=
2	0	=

14
35
22
63
20

ACTIVITIES

1. The game of Mail Carrier may be played. Use a set of expanded numeral cards and a set of two-digit numeral cards for 90 and less. The mail carrier is given the expanded numeral cards. The two-digit numeral cards are each placed on "houses" (desks) of other players. The mail carrier must find the matching card for each house. If incorrect the person who lives in the "house" becomes the mail carrier.
2. The child might enjoy playing the following detective game. On a worksheet scatter the numerals from 1-90. Write one number twice. To play this game the child finds the number "1" and circles it, the number "2" and circles it, then "3" and so on through "90". When finished circling all the numbers from 1 to 90, the child will find one number that was not circled. This is the "crook."
3. Adapt Bingo as described in the Activity Reservoir. Put two-digit numerals in the cells. Call the numbers as 8 tens + 4.

Using the Book Panel 1: The child is to count by 1's to write the missing numerals in each row. Explain that the hand means a new sequence starts. Tell the child to trace all given numerals. Have the child read each row after completing it.

Panel 2: Have the child write the number of tens in the first column, and the number of ones in the second column.

Panel 3: Have the child write the standard numeral in the blank.

OBJECTIVE

To write expanded and two-digit numerals in order from 90 to 100

PACING

Level A All (1 guided)

Level B All

Level C All

MATERIALS

3 paper towel tubes, 30 paper cup rings, expanded numeral cards for $90 + 0$ to $90 + 9$, standard numeral cards 90-100

SUGGESTIONS

Initial Activity Adapt the procedures described in the Initial Activity on page 141 using the rings to develop the expanded and two-digit numerals for 90 through 99. To develop 100, have the child place 10 tens on the ten ring. Point out that this is 10 tens and 0 ones. Attach a hundreds tube. Explain 10 tens can be traded for 1 hundred and do this. Then show the numeral 100 pointing out the digits, left to right. Relate 1 on the hundreds tube, 0 on the tens, and 0 on the ones.

ACTIVITIES

1. You may play Stop the Magician as described in the Activity Reservoir. Have 2 children alternate counting by ones. When a child makes a mistake start erasing the man.

2. Have the child use the Number Chart, as described in the Activity Reservoir, to count from 1-100.

3. See Bulletin Board Suggestion 2 in the Chapter Overview.

Ninety through One Hundred

1.	9 tens + 0	$90 + 0$	90
2.	9 tens + 1	$90 + 1$	91
3.	9 tens + 2	$90 + 2$	92
4.	9 tens + 3	$90 + 3$	93
5.	9 tens + 4	$90 + 4$	94
6.	9 tens + 5	$90 + 5$	95
7.	9 tens + 6	$90 + 6$	96
8.	9 tens + 7	$90 + 7$	97
9.	9 tens + 8	$90 + 8$	98
10.	9 tens + 9	$90 + 9$	99
11.	10 tens + 0	$100 + 0$	100

Order of numbers 90 through 100 (one hundred forty-five) 145

Using the Book You may call attention to the expanded numerals written in order on the post signs from 9 tens + 0, 9 tens + 1, 9 tens + 2, on to 9 tens + 9.

Panels 1-2: Read, "9 tens + 0, $90 + 0$, 90." Have the child trace the numerals. Then read, "9 tens + 1." Ask the child to complete the expanded numeral $90 + 1$. Tell the child to write 9 in the tens place and 1 in the ones place. Read, "Ninety-one."

Panels 3-11: Ask the child to read each expanded numeral on the left. Then write another expanded numeral and finally write each standard numeral on the right. When finished, ask the child to start with 90 and read each standard numeral to 99. Explain that the numerals are in a one more order. Have the child say 100 comes after 99.

Counting to One Hundred

1	2	3	4	5	6	7	8	9	10
	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



146 (one hundred forty-six) Counting and writing numerals to 100

Using the Book You may explain that this is a chart for writing numerals in order from 1 to 100. Ask the child to complete the first row across from 1 to 10. After the child has also completed the second row across, point out that the order of the ones in the second row is the same as the order of the ones in the first row. Explain that the ones in each of the other rows will be in this same order. Now you may direct the child to write 21 at the beginning of the third row and continue writing the numerals by 1's to 100.

OBJECTIVE

To write numerals in order from 1-100

PACING

Level A All

Level B All

Level C All

MATERIALS

Number Chart and tags for 1-100
(See Activity Reservoir.)

SUGGESTIONS

Initial Activity Involve the child in placing the tags for 1-100 on the Number Chart. Point out that the order of the ones digits in the second row is the same as in the first row. Point out that the order of the ones digits in the third row and all the other rows is the same as in the first row.

ACTIVITIES

1. Have the child count the number of books or chalk, etc.

2. Make a worksheet showing two columns, one with two-digit numerals, one with expanded numerals ($50 + 6$). Make the columns out of order and tell the child to match them.

3. Display a fish bowl containing 100 beans. Ask the child to guess how many beans are in the bowl. Challenge the child to count the beans by making groups of ten to see how close the guess was.

OBJECTIVE

To name the number that comes just after a given number, between 1 and 100

PACING

- Level A (Initial Activities only)
- Level B All (1-2, first part of 3 and 4 guided)
- Level C All (1-2, first part of 3 guided)

MATERIALS

See Bulletin Board suggestion 2 in the Chapter Overview.


SUGGESTIONS

- Initial Activities
1. Have a boy stand facing left. Place a girl before (in front of the boy) and another girl after (behind) the boy. Ask, "Which girl is just after the boy?" Point out that the other girl is just before the boy.
 2. See Bulletin Board Suggestion 2 in the Chapter Overview. Point to 35. Ask, "What number comes just after 35?" Follow a similar procedure pointing to other numbers.


ACTIVITIES

1. Have the child place a two-digit numeral on the flannel board. Have another child put up the number just after. Point out 1 more one. Use other numbers.
2. Prepare a worksheet (or use the chalkboard) so that the child can match numbers with those that come just after as 29 in the left column would be matched with 30 in the right.
3. Adapt Bingo as described in the Activity Reservoir. Place two-digit numerals in the cells. Call the numbers as "The number just after 62."

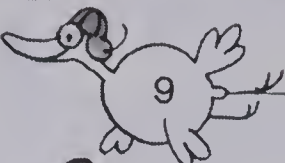
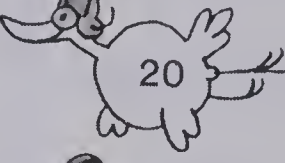
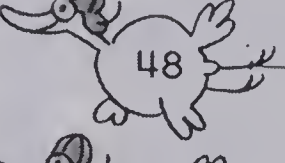
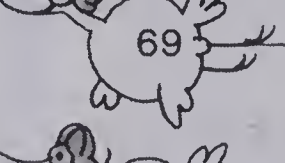
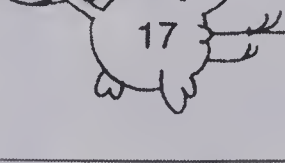
1.



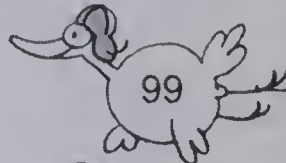
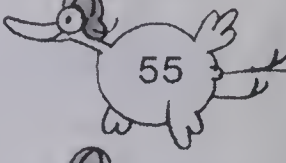
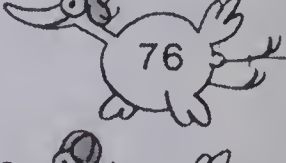
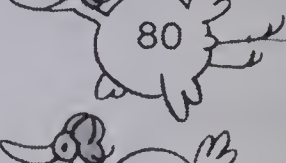
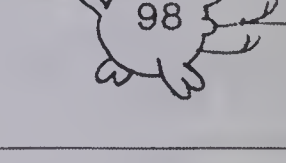
2.




3.

	<input type="text"/>
	21
	49
	70
	18

4.

	<input type="text"/>
	56
	77
	81
	99

10, <u>11</u>		89, <u>90</u>
52, <u>53</u>		71, <u>72</u>
64, <u>65</u>		99, <u>100</u>

Concept of the number after (one hundred forty-seven) 147


Using the Book Panel 1: Have the child tell which comes after, the horse or the wagon? (wagon) Point out the 7 written on the horse and the 8 on the wagon. Elicit that 8 comes just after 7.


Panel 2: Ask, "Which comes after, the car or the horse trailer? (trailer)" Point out the 19 written on the car and ask, "What number comes just after 19?" Have the child write 20 on the trailer.

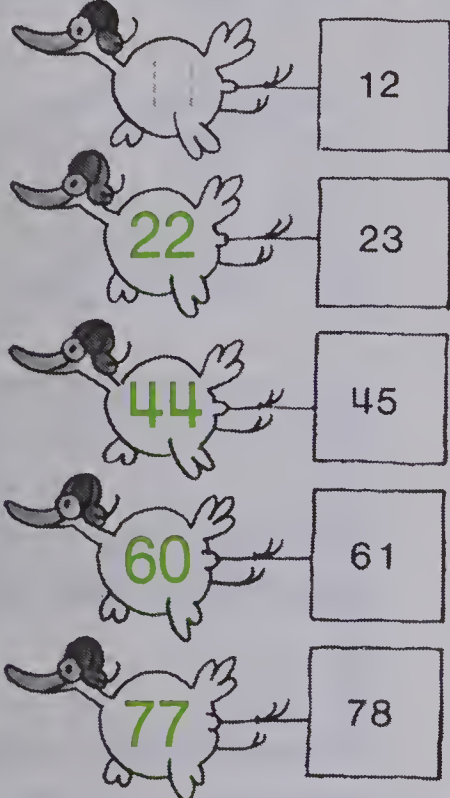
Panels 3-4: Direct the child to read the numeral on each of the flying geese and write the numeral that comes just after it.

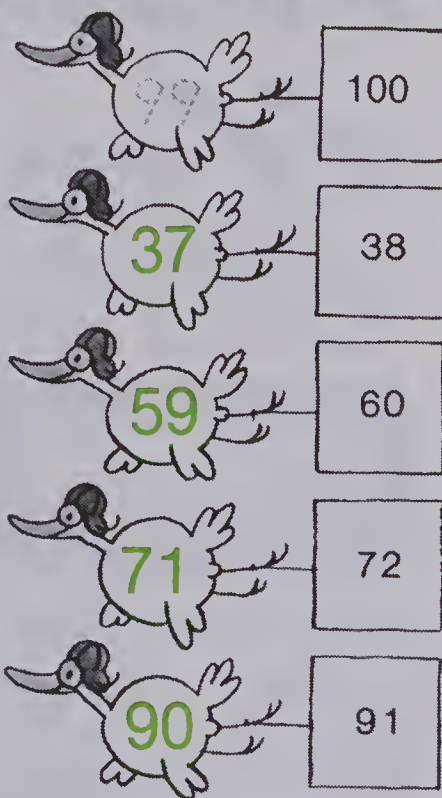
Panel 5: The child is to write the numeral that comes just after each numeral.

Just Before

1. 

2. 


3. 

4. 

5. 79, 80

95, 96

63, 64



46, 47

99, 100

77, 78

148 (one hundred forty-eight) Concept of the number before

OBJECTIVE

To name a number that comes just before a given number between 1 and 100

PACING

Level A (Initial Activity only)

Level B All (1-2 first part of 3 and 4 guided)

Level C All (1-2 first part of 3 guided)

MATERIALS

Number Chart, tags for 1-100
(See the Activity Reservoir.)

SUGGESTIONS

Initial Activity Display the numeral tags from 60 through 75 in random order all over the Number Chart. Ask the children to find a numeral, such as 72. After they find the numeral, have them tell and show the numeral that comes just before that number. You might also have them find the numeral that comes just after the number.

ACTIVITIES

1. The Number Chart, as described in the Activity Reservoir, may be displayed. When the tags from 1 to 100 are placed on the chart, point to various numerals on the chart. Have the child write each numeral to which you point. Then have the child write the numeral that is just before and just after it.

2. Play Queen's Plate as described in the Activity Reservoir. Give a number; the child should give the number just before. A correct answer moves the horse a furlong.

3. Adapt Bingo as described in the Activity Reservoir. Call numbers as "the number just before 60."

Using the Book Panel 1: Have the child tell which comes before, the horse or the wagon? (horse) Point out the 5 written on the horse and the 6 written on the wagon. Elicit that 5 comes just before 6.

Panel 2: Ask, "Which comes before, the car or the horse trailer? (car)" Point out the 20 written on the horse trailer. "What number comes just before 20?" Have the child write 19 on the car.

Panels 3-4: Direct the child to write on each of the flying geese the numeral that comes just before the numeral written on the card behind it.

Panel 5: Have the child write the numeral that comes just before each numeral.

OBJECTIVE

To identify which of two numbers is greater

PACING

- Level A All (1-2 guided)
- Level B All (1-2 guided)
- Level C All (1-2 guided)

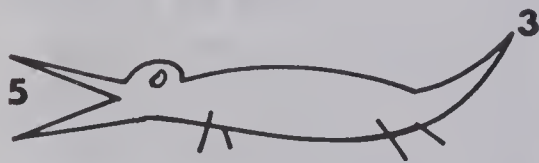
MATERIALS

10 empty ten-boxes, 100 blocks, numeral cards for 1 to 100

SUGGESTIONS

Initial Activity Display a group of 45 blocks and a group of 42 blocks. Have the child place the appropriate numeral card next to each set. Ask, "Which is the greater number?" Elicit that if the digits in the tens place are the same then we compare the digits in the ones place to determine which number is greater. Repeat with other numbers.

Some students may be ready for the symbol ">". Remind them that the greater number is at the open end, while the smaller number is at the closed end. 5 > 3 Perhaps you can dress up the symbol:



ACTIVITIES

1. Play Battle as described in the Activity Reservoir.
2. Make a worksheet or use the chalk-board with several numerals listed, as 53 . The child is to write the number that is one greater.
3. You may ask questions such as, "I am thinking of a number. It means 6 tens. What is the number?" The child responds by showing and reading the 60. Then ask a question such as "What number is 10 greater than 60?" Have the child show the numeral 70 and read it.

EXTRA PRACTICE

For students who are ready, provide a worksheet:
use > or =

6 ○ 5

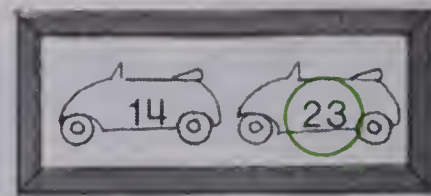
2 ○ 2

Greater Than

1.

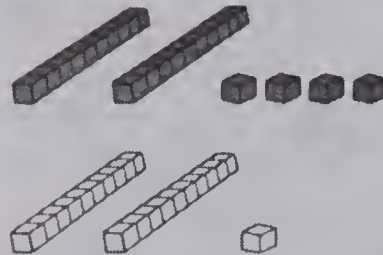


14

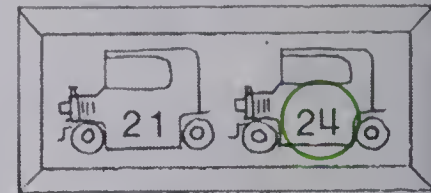


23

2.

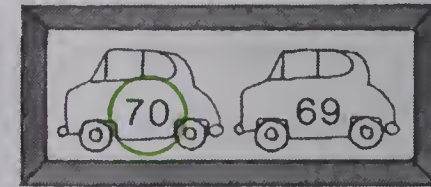
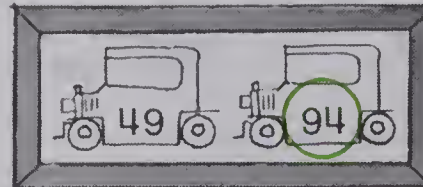
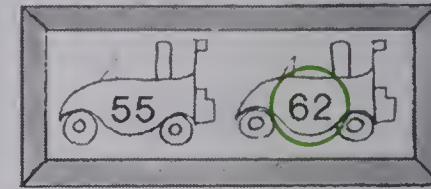
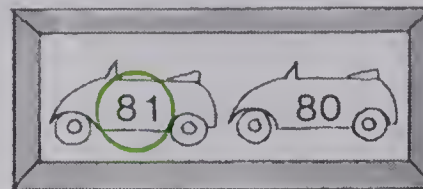
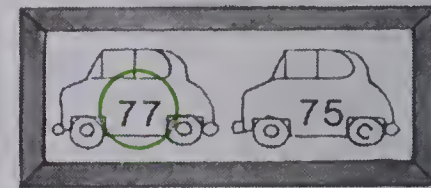
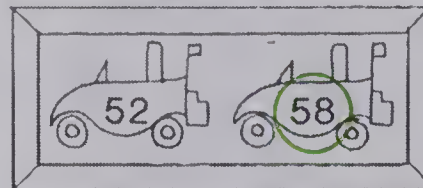
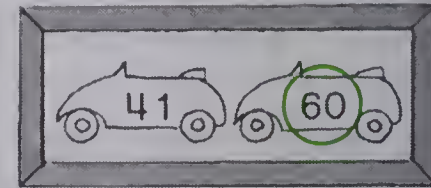
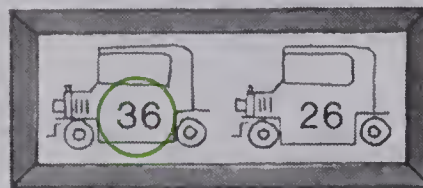


24



21

3.



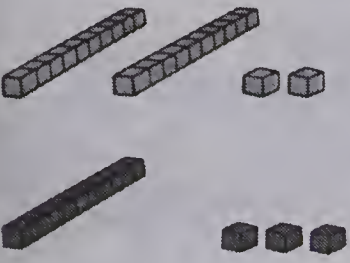
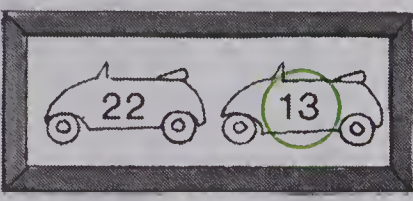
Comparing numbers less than 100, greater than (one hundred forty-nine) 149

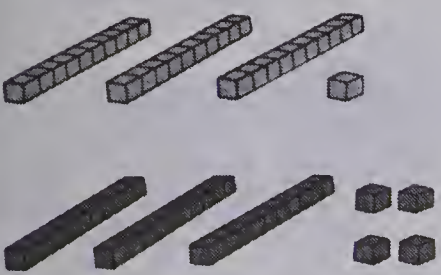
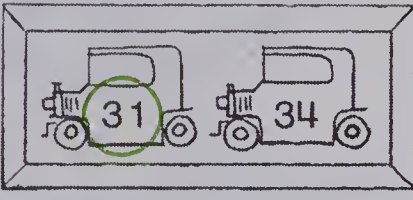
Using the Book Panel 1: Point out the blue ten-box and 4 single blue blocks. Ask, "How many blue blocks in all? (14)" Then point out there are 2 green ten-boxes and 3 single green blocks. Ask, "How many green blocks in all? (23)" Then ask, "Which is more, 14 blocks or 23 blocks?" Have the child trace the ring around 23. Now have the child look at the pictures of the two cars. Ask, "Which number is greater, 14 or 23?" Explain that 2 tens is more than 1 ten so 23 is greater than 14. Have the child draw a ring.

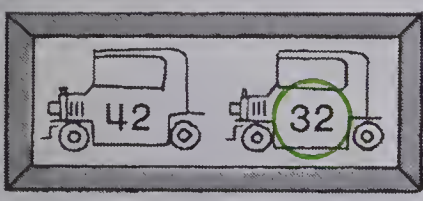
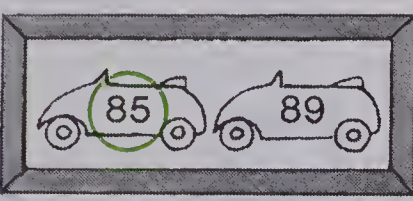
Panel 2: Ask similar questions to guide the child to tell that 24 red blocks is more than 21 yellow blocks. Have the child ring 24. Then direct attention to the two old cars. Ask, "Which number is greater, 21 or 24?" Explain that when the tens are the same, the ones place must be compared. Since 4 is greater than 1, 24 is greater than 21. Have the child ring 24.

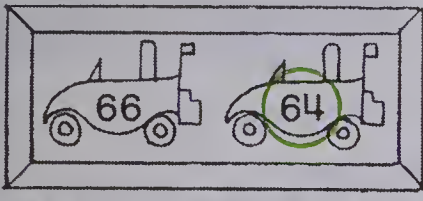
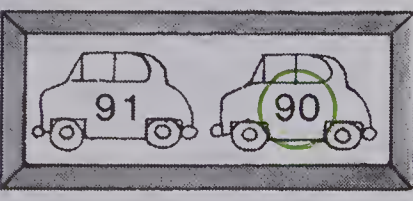
Panel 3: Direct the child to look at the numerals on each pair of cars and draw a ring to show which number is greater.

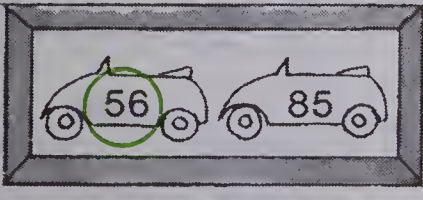
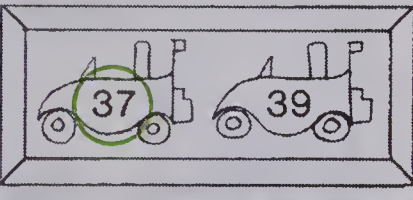
Less Than

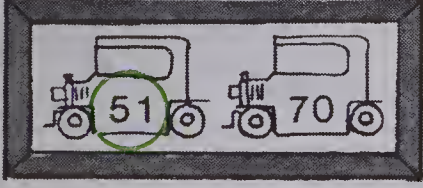
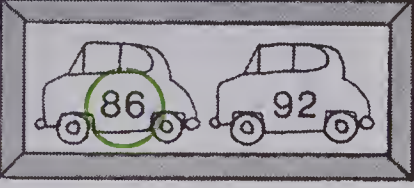
1.  22 

2.  31 

3.  

150 (one hundred fifty) Comparing numbers less than 100, less than

Using the Book Panel 1: Point out there are 2 red ten-boxes and 2 single red blocks. Ask, "How many red blocks in all in the first picture? (22)" Then point out there is 1 green ten-box and 3 single green blocks. Ask, "How many green blocks in all? (13)" Then ask, "Which is fewer, 22 blocks or 13 blocks?" Have the child trace the ring around 13. Now have the child look at the pictures of the two cars. Ask, "Which number is less, 22 or 13?" Explain that 1 ten is less than 2 tens, so 13 is less than 22. Have the child draw a ring.

Panel 2: Ask similar questions to guide the child to tell that 31 red blocks is less than 34 green blocks. Have the child ring 31. Then direct attention to the two old cars. Ask, "Which is less, 31 or 34?" Explain that the tens (3) are the same but 1 one is less than 4 ones, so 31 is less than 34. Have the child ring 31.

Panel 3: Direct the child to look at the numerals on each pair of cars and draw a ring to show which number is less.

OBJECTIVE

To identify which of two numbers is less

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All (1-2 guided)

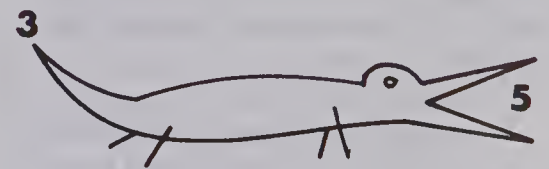
MATERIALS

10 empty ten-boxes, 100 blocks, numeral cards for 1 to 100

SUGGESTIONS

Initial Activity Display a group of 38 blocks and a group of 35 blocks. Have the child place the appropriate numeral card next to each set. Ask, "Which is less?" Elicit that if the digits in the tens place are the same then we compare the digits in the ones place to determine which number is less. Repeat with other numbers.

If you introduced the symbol $>$ on the previous page, you may want to introduce $<$ here. Use the same explanation as on previous page.



ACTIVITIES

1. Make a worksheet with numerals listed, as 49. Have the child write the number that is just one less.

2. Play Battle as described in the Activity Reservoir.

3. You may ask questions such as, "I am thinking of a number. It means 8 tens. What is the number?" The child responds by showing and reading 80. Then asks a question such as, "What number is 10 less than 80?" Have the child show the numeral 70 and read it.

EXTRA PRACTICE

For students who are ready, provide a worksheet.

Use $<$ or $=$
3 \bigcirc 4
5 \bigcirc 5

OBJECTIVES

To associate times on the hour with activities
To tell time to the hour

PACING

Level A 151 All (1-4 guided)
Level B 151 All (1-3 guided)
Level C 151 All (1-2 guided)

VOCABULARY

o'clock

MATERIALS

demonstration clockface

BACKGROUND

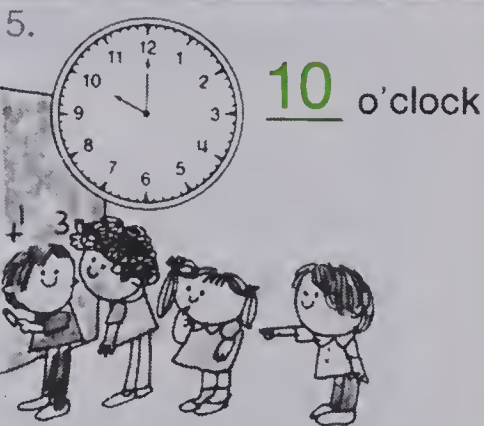
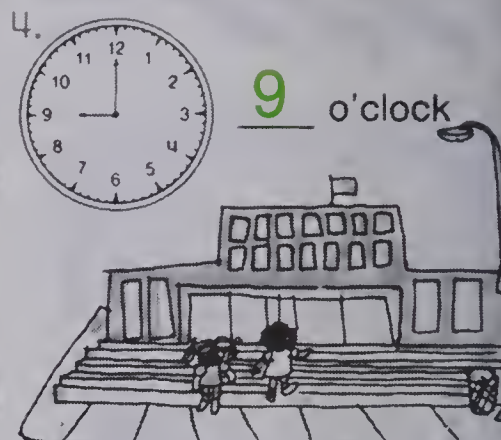
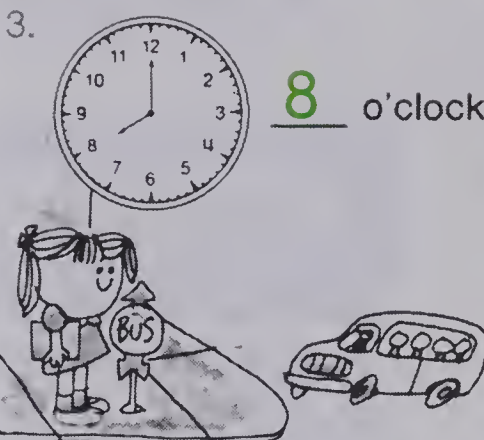
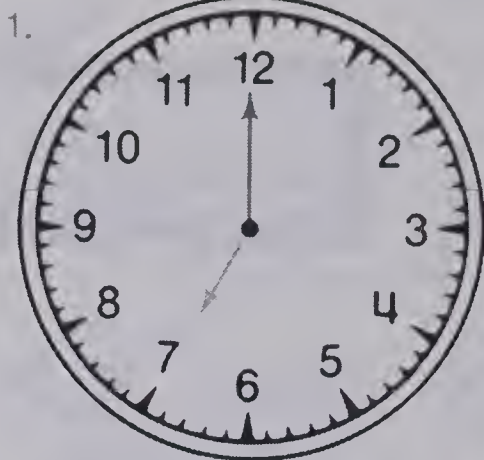
See Item 3 of the Chapter Overview Background.

SUGGESTIONS

Initial Activities 1. Motivate the child to tell time by showing the importance of time in daily life. Conduct a discussion about the time favorite television programs begin and end, the time the child gets up to go to school, bedtime, lunchtime, etc.

2. Display a demonstration clockface, with both hands on 12, and have the child read the numerals on the clockface beginning with 1. Direct attention to the hands of the clock. Have the child identify the longer hand, then the shorter hand. Explain that the longer hand is the minute hand, and the shorter hand is the hour hand. Move the hour hand to 2. Write ___ o'clock and assist the child in completing the sentence. Repeat this procedure for various hours. For each time, stress that when the minute hand points to 12 then the numeral to which the hour hand points shows the hour.

It's About Time



Associating activities with time to the hour (one hundred fifty-one) 151

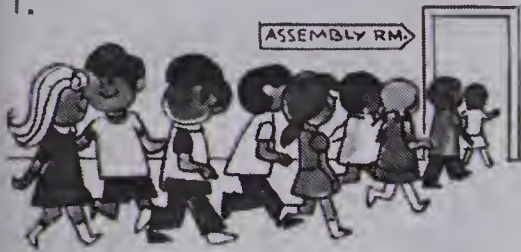
Using the Book Panel 1: Direct attention to the big clockface and have the child read the numerals around, beginning with 1. Ask the child to look at the two hands and point to the hand that is shorter. Ask, "What does it point to? (7) It is 7 o'clock." Explain that the long hand will always be on 12 when the short hand is pointing directly to any of the numerals on the clock. On this page, the child will need to read only the numeral to which the short hand points to tell time on the hour.

Panel 2: Say, "Each picture shows the girl doing something many children do at the same time of the day. What is the girl doing first? (waking up) What time is it? (7 o'clock)" Say, "How many of you get up about 7 o'clock in the morning to get to school on time?" Have the child trace 7.

Panels 3-6: You may continue to guide the child to discuss what is happening and to read and complete each panel.

What Time Is It?

1.



10 o'clock



11 o'clock



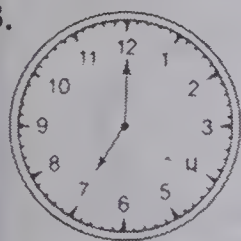
1 o'clock



2 o'clock



3 o'clock



7 o'clock



8 o'clock



9 o'clock

OBJECTIVES

To recognize when an hour has passed
To write the time on the hour

PACING

Level A 152 All (1-2 guided)

Level B 152 All (1 guided)

Level C 152 All (1 guided)

MATERIALS

demonstration clock

SUGGESTIONS

Initial Activity To help the child understand the relationship of the distance traveled by each hand, set the demonstration clockface for 1 o'clock and for each succeeding hour up to 12 o'clock. Have the child read each time. Point out that an hour does not really pass this fast. The child should be led to observe that during the course of an hour the longer minute hand goes all the way around while the shorter hour hand goes from one numeral to the next numeral.

The child can construct a clockface out of a paper plate. Write the numerals in pencil around the rim of the plate. Have the child use a crayon to trace the numerals. Cut hands of cardboard and show the child how to fasten them to the clockface with a paper fastener or brad.

ACTIVITIES

1. To teach the child the meaning of an hour, call attention to the beginning of an hour when some school activity begins. When the activity is finished, stress that one hour has passed and tell the time.

2. Assist the child in making a clockface on the flannel board.

3. See Bulletin Board suggestion 3 in the Chapter Overview.

4. Using a large clockface show different times of a day. Say, "Let's pretend. Tell the time and tell what you would be doing." Show times of the day in sequence, as 7 o'clock (in the morning), 8 o'clock (in the morning), 12 o'clock (noon), 3 o'clock (in the afternoon), 6 o'clock (at night), 8 o'clock (at night), 12 o'clock (at night).

Using the Book Panel 1: The child may trace the time shown on the first clock and write the time shown on the next clock below. Relate what is happening in each picture to each time of the morning. On the clock with blue numerals, have the child trace on the edge from 10 to 11. Explain that, when one hour has passed, the short hand has moved from one numeral to the next, as from 10 to 11.

Panel 2: Have the child write each time shown. Explain that one hour has passed from 1 o'clock to 2 o'clock and another hour has passed from 2 o'clock to 3 o'clock.

Panel 3: Have the child write each time shown. Ask the child to explain how much time has passed from the first clock to the second and from the second clock to the third.

OBJECTIVE

To draw the short hand on a clockface, showing a given hour

PACING

Level A 153 (Initial Activities only)

Level B 153 All (1-2 guided)

Level C 153 All (1 guided)

MATERIALS

demonstration clockface, paper plate, cardboard, paper fasteners

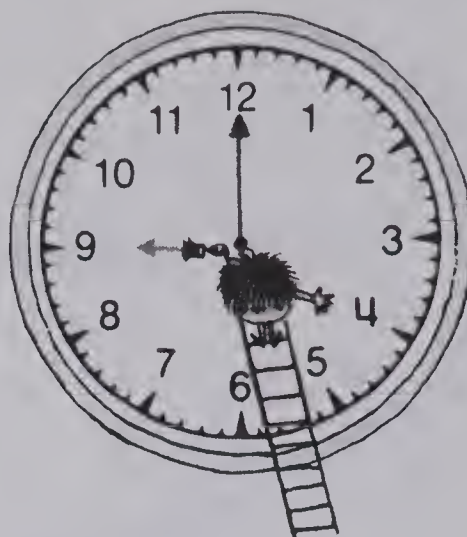
SUGGESTIONS

Initial Activities 1. Using the demonstration clockface, review telling time on the hour.

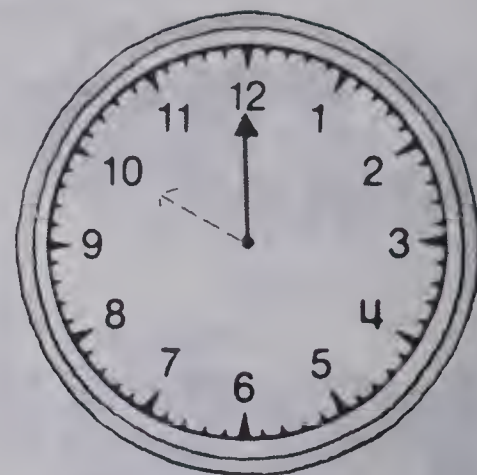
2. Use the clocks, or the procedure for making them, as described on page 152. The child might enjoy playing a game called Let's Pretend using the clocks. Use events that the child is familiar with such as getting up, eating lunch. Suggest that the child pretend that he/she gets up at 7 o'clock. Have the child show this time on the clockface. Repeat this activity for other times on the hour.

Showing the Time

1.

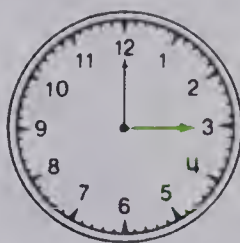


9 o'clock

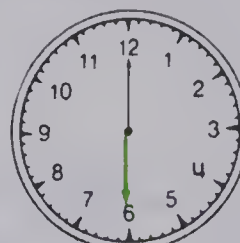


10 o'clock

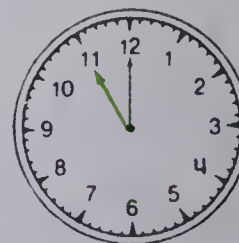
2.



3 o'clock

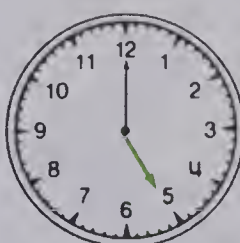


6 o'clock

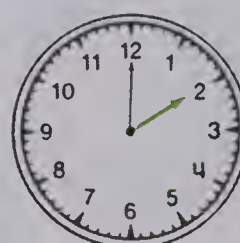


11 o'clock

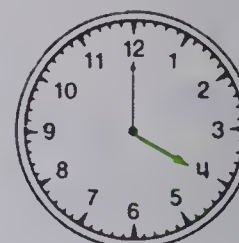
3.



5 o'clock



2 o'clock



4 o'clock

Drawing the hour hand (one hundred fifty-three) 153

Using the Book Panel 1: Guide the child to observe that the critter is putting the short hand on 9 to show 9 o'clock. On the second clock ask the child to use a crayon to trace the short hand to 10 to show 10 o'clock.

Panel 2: Ask, "What time is written below the first clock in this row? (3)" Have the child use a crayon to draw a short hand to 3. Then have the child read the time shown below each of the other clockfaces and draw the short hand to show each.

Panel 3: Continue in the same manner as in panel 2.

THINK!



1. 7 tens + 1 = <u>71</u> 6 tens + 0 = <u>60</u> 8 tens + 8 = <u>88</u>	2. 10 + 7 = <u>17</u> 80 + 2 = <u>82</u> 90 + 9 = <u>99</u>	3. 50, <u>51</u> <u>70</u> , 71 <u>99</u> , 100
--	--	--

4.

	53	54	<u>55</u>	<u>56</u>	<u>57</u>	<u>58</u>	<u>59</u>	60
	76	77	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>	<u>82</u>	83
	30	40	<u>50</u>	<u>60</u>	<u>70</u>	<u>80</u>	<u>90</u>	100
	92	93	<u>94</u>	<u>95</u>	<u>96</u>	<u>97</u>	<u>98</u>	99

5.

4 + 3 <u>7</u> 7 + 1 <u>8</u>	2 + 6 <u>8</u> 5 + 2 <u>7</u>	5 + 1 <u>6</u> 4 + 4 <u>8</u>
8 - 0 <u>8</u>	8 - 5 <u>3</u>	7 - 1 <u>6</u>

7.

12 o'clock
6 o'clock

154 (one hundred fifty-four) Chapter 7 Test

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A 1-6 and 7 (first item only)
Level B All
Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Use the Number Chart, as described in the Activity Reservoir, to provide practice in counting by 1's, 2's, 5's, and 10's through 99 and to review the concept before and after.

2. The child should enjoy playing the counting game described under the blue screen on page 100. Use this game to provide practice in counting by 2's, 5's, and 10's through 99.

3. Adapt Queen's Plate as described in the Activity Reservoir. Have children alternate counting by 1's, 2's, 5's, or 10's. When 1 child misses, the other advances a furlong.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: Have the child write the standard numeral for each. [page 135 A]

Panel 2: Have the child write the standard numeral for each. [page 137 A]

Panel 3: Have the child write the numeral that comes just after and the numeral that comes just before [pages 147, 148 B]

Panel 4: Tell the child to look for the counting pattern in each row and write the missing numerals. Remind the child that each hand means that a new pattern starts. [pages 136, 138 D]

Panel 5: Tell the child to add. [pages 129, 139 C]

Panel 6: Tell the child to subtract. [pages 129, 139 C]

CHAPTER 8 OVERVIEW

LEVEL 8

The chapter provides experiences in recognizing objects that are symmetric which leads to consideration of two parts of an object that are the same size and shape. This, in turn, is used to develop an understanding of halves and one half. Experiences to develop understanding of thirds and one third, fourths and one fourth are also introduced. Learning to tell time is extended to time on the half hour. The value of coins (penny, nickel, dime, and quarter) and counting to determine the value of sets of coins are also included.

OBJECTIVES

- A To recognize one half, one third, and one fourth of a whole
- B To determine the value of sets of coins
- C To identify groups separated into halves
- D To identify one half of a group

VOCABULARY

same size 155
halves 157
whole 157
one half 158
thirds 159
one third 161
fourths 163
one fourth 165

penny 167
nickel 167
cent 167
cents 167
coin 167
dime 169
quarter 171
price 172

BACKGROUND

1. The concepts of halves and one half are introduced by physical situations that show objects that are symmetrical, that is, the object is separated into two parts that are the same size and shape. The terms "symmetry" and "symmetrical" are not used at this time.

This chapter also provides readiness experiences leading to an understanding of thirds and one third, fourths and one fourth.

2. The penny, nickel, dime, and quarter are introduced in this chapter. These words name the coins, and the word cents is used when referring to the value of a set of coins. The concept of money is mastered only through daily use in relation to real situations in the child's life. Therefore, it is advisable to discuss the importance of knowing the value of money and to provide the child with daily practice telling how much a set of coins is worth.

MATERIALS

construction paper
crayons
scissors
an orange
paper plates
candy bar
construction paper pizza pie
articles with price tags showing 50¢ or less
2 quarters
6 dimes
12 nickels
60 pennies

CAREER AWARENESS

Printers [173]

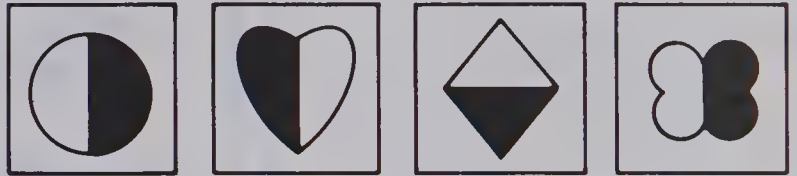
Printers are people that tend the printing press and are responsible for the final printed product. Most printers work for book and magazine publishers and in commercial printing shops. Others are employed by newspaper plants, and by organizations that do their own printing including local, state, and federal governments. Some printers learn the trade by becoming apprentices while others learn the skills by combining vocational school training with job experience.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that printed material plays an important role in our society for communication, education, and entertainment. We rely on the printer to put together books, magazines, newspapers, etc. accurately and efficiently.

Photo description: The printer is cleaning the rollers of the printing press before the next press run. This insures that the printing impressions are distinct and uniform.

BULLETIN BOARD

1. Divide the bulletin board into three sections. Display a picture of a pie showing halves in the first section, a pie showing thirds in the second section, and a pie showing fourths in the third section. Using 3" x 5" cards make a set of 4 cards to illustrate each fraction. For example, one half may be illustrated as:



Place all the cards in a plastic bag and tack it to the bulletin board. Have children pick cards from the bag, determine which fraction it illustrates, and tack it under the appropriate pie.

2.a. Construct a poster showing the relationship of pennies and nickels to a dime. For example:



b. Show the relationships of pennies, nickels, and dimes to a quarter.

SPECIAL NOTE

The value of money is introduced in this chapter. Consumer topics of associating money with buying, the idea of saving money, and adding and subtracting money are included. All pages involving money (pages 167-173) can be used to inspire discussions on spending money, buying, saving, selling, etc.

OBJECTIVE

To identify two parts that are the same size and shape

PACING

Level A	155 All (guided)
	156 All
Level B	155 All (guided)
	156 All
Level C	155 All (guided)
	156 All

VOCABULARY

same size

MATERIALS

paper, scissors

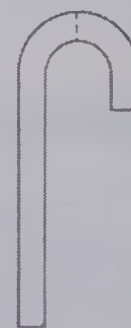
BACKGROUND

See Item 1 in the Chapter Overview Background.

SUGGESTIONS

Initial Activity Each child should have a rectangular sheet of paper. Guide the child in folding the paper in half then drawing half an object, such as a heart, along the fold. Have the child cut along the drawn line and then unfold the cut-out. Elicit the idea that the crease separates the figure into two parts of the same size.

Shapes



Two parts the same shape and size; symmetry (one hundred fifty-five) 155

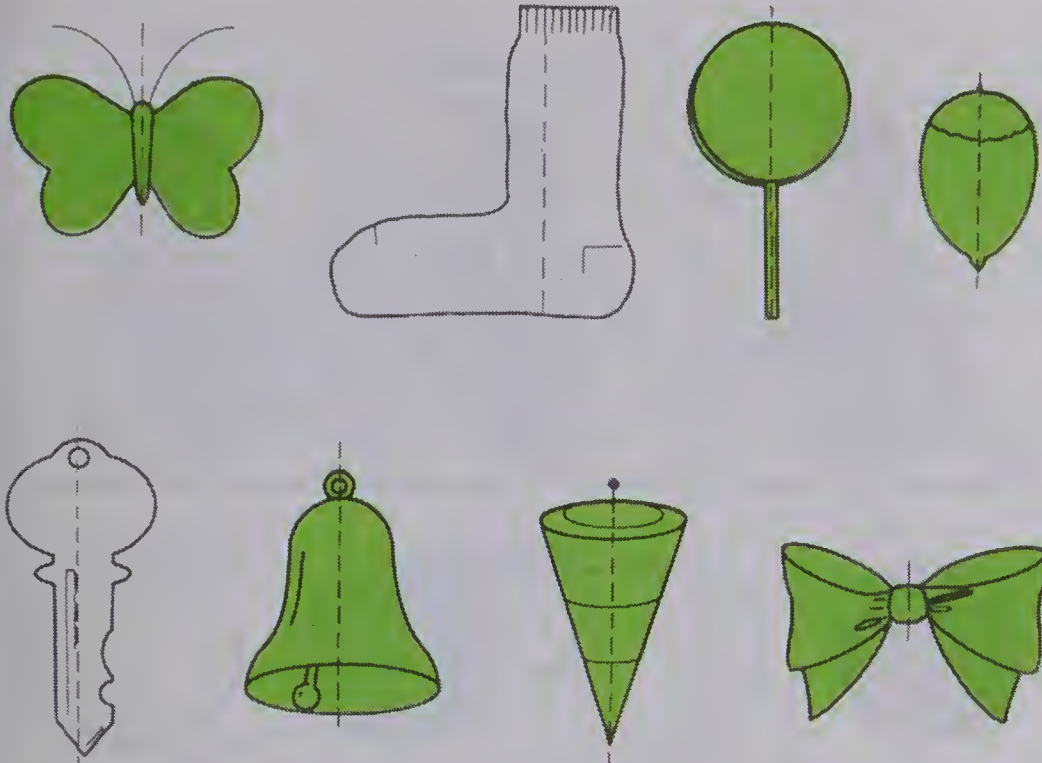
Using the Book Panel 1: Ask, "What is the boy doing on the folded sheet of paper? (drawing lines from a point to each end of the fold)"

Panel 2: Ask, "What is the boy doing here? (cutting along the lines he drew)"

Panel 3: Call attention to the crease in the figure the boy cut out. Say, "The crease separates the figure into two parts. Are the parts the same size? (yes)"

Panel 4: Tell the child to color each picture that can be folded along the dashed line so that the two parts match.

Panel 5: Help the child to identify everything shown in the picture. Ask, "Can you fold the picture of the pumpkin so the two parts match? (yes)" Have the child draw a line where the fold would be. The child will verify this in the activity on page 186.



ACTIVITIES

1. Prepare a set of 6-8 cards with pictures of objects similar to those in panel 4 on page 155. Have the child place together, in one pile, all the pictures that show two parts that are the same size. Help the child to explain why the others were rejected.

2. Have the child cut out shapes of his/her own design from folded pieces of paper. Elicit the idea that when the paper is unfolded the crease always separates the figure into two parts of the same size.

3. The child might enjoy finding objects in the classroom that show two parts that are the same size, such as an open book.

4. Have the child fold a square piece of paper in at least two different ways, each of which results in two parts that are the same size.

Activity



156 (one hundred fifty-six) Practice • Activity: Showing a line of symmetry

Using the Book Top of page: Have the child touch the butterfly. Ask, "If you fold the butterfly along the dashed line, will the two parts match? (yes)" Ask the same question about the sock. (The answer is no.) Have the child color each picture that can be folded along the dashed line so that the two parts match.

Activity: Have the child cut out the picture of the pumpkin and fold it so that the two parts match. Since the pumpkin on page 185 is on the reverse side, the child can determine if his or her previous response was correct. You might have the child color the pumpkin. It can be displayed or brought home.

OBJECTIVE

To identify objects separated into halves

PACING

Level A 157 All (guided)
Level B 157 All (1-5 guided)
Level C 157 All (1-4 guided)

VOCABULARY

halves, whole

MATERIALS

an orange

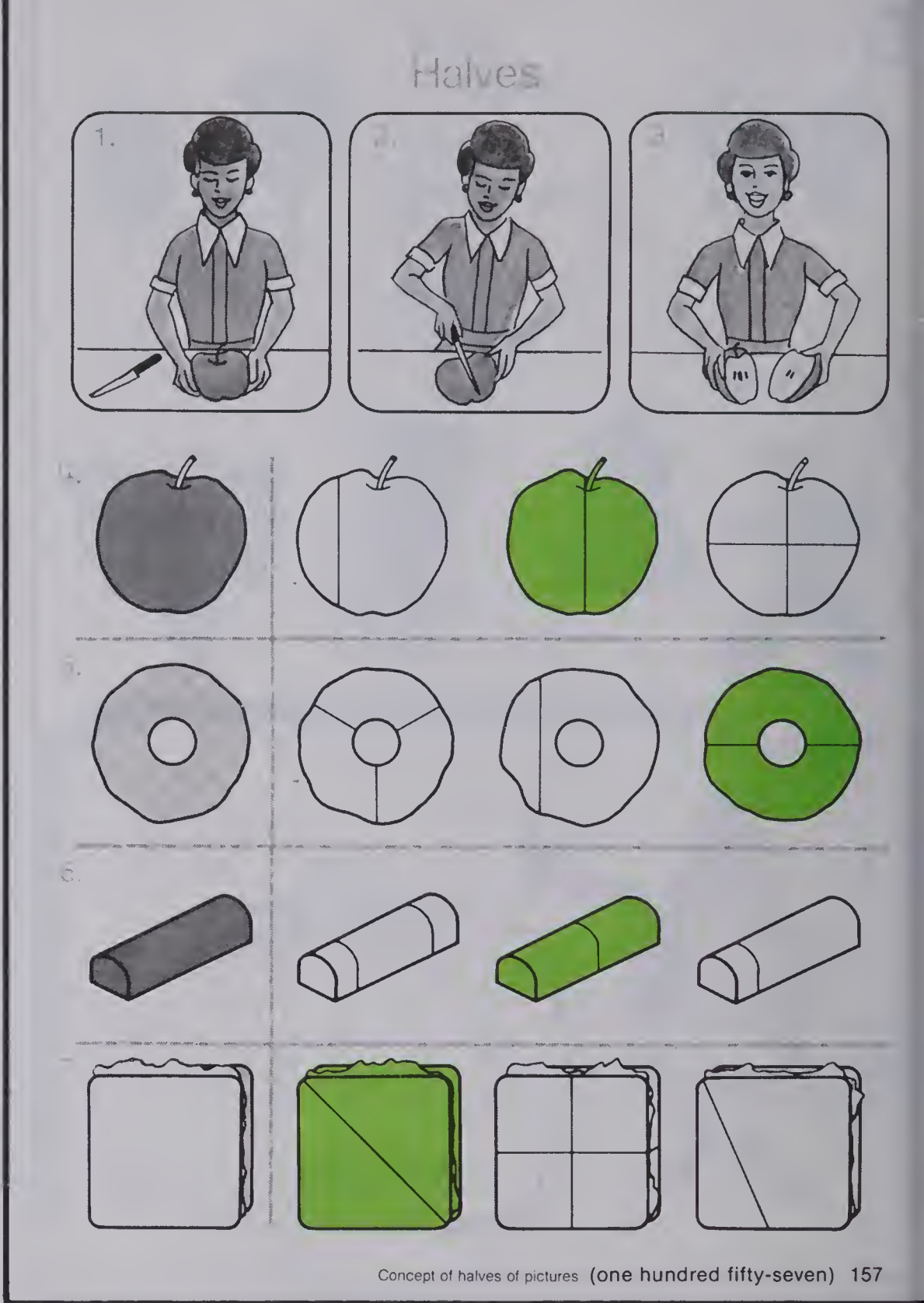
SUGGESTIONS

Initial Activity Create a story about two children who want to share an orange (candy bar) so that each part will be the same size. Assist the child in cutting the orange into two parts that are the same size and stress that when the whole is cut into two parts the same size, these parts are called "halves." Fit the halves together and ask, "How many halves make a whole? (2)"

ACTIVITIES

1. Help the child fold rectangular and circular sheets of paper in half. Elicit the idea that the crease separates the sheet into two parts that are the same size. Explain that these parts are called halves.

2. Have the child identify objects in the room that show halves. For example, an open book, a double door.



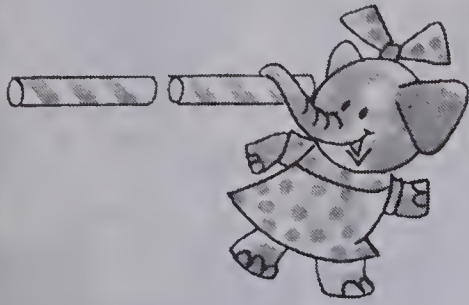
Using the Book Panels 1-3: Have the child describe what is happening in each picture. Ask, "Are the two parts of the apple the same size? (yes). What are these parts called? (halves)."

Panel 4: Tell the child to touch the first uncolored apple. Then have the child trace along the straight line with a finger. Ask, "Does the line separate the apple into halves? (no)." Have the child color the apple that has been separated into halves.

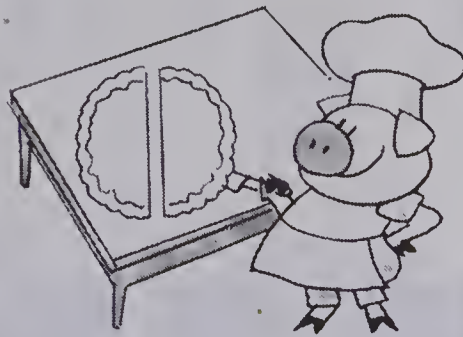
Panels 5-7: Have the child color the one figure in each panel that shows halves.

One Half

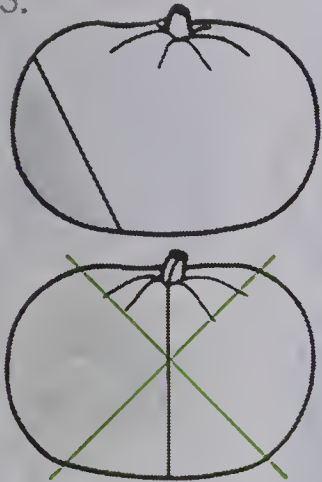
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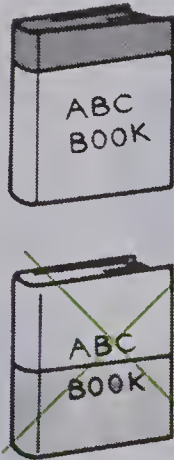
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4.



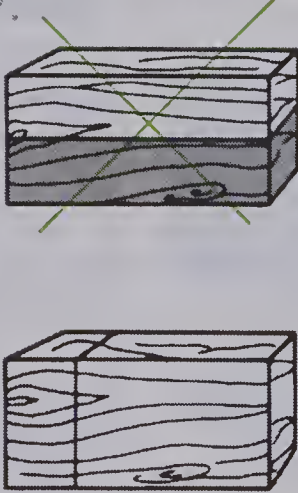
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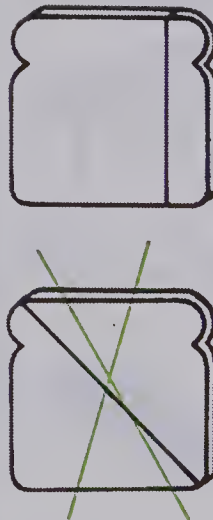
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7.



8.



158 (one hundred fifty-eight) Concept of one half

OBJECTIVE

To recognize one half of a whole

PACING

Level A 158 All (1-5 guided)

Level B 158 All (1-4 guided)

Level C 158 All (1-3 guided)

VOCABULARY

one half

MATERIALS

paper plate, crayon, scissors

SUGGESTIONS

Initial Activity Help the child cut a paper plate into halves and place one half on the other to show that the parts are the same size. Elicit that two parts that are the same size are called "halves." Show just one of the parts and explain that it is one of the halves so it is called "one half." The child may color one half of the plate. Place the two parts together again, as a whole, to show that one of the halves or one half is colored.

ACTIVITIES

1. Display pictures of objects—some that have been separated into halves by a line and some that have not. Have the child identify those that show halves and then color in one half. Stress that each part is called one half.

2. Have the child put objects on the flannel board. Then have the child use yarn to demonstrate how the object can be divided into halves.

Using the Book Panel 1: Ask, "Is each part of the candy stick the same size? (yes)". Explain that the elephant is holding one half of the candy stick.

Panel 2: Ask, "Is each part of the pie the same size? (yes). What part of the pie is the pig holding? (one half). How many halves are there in a whole? (two)."

Panel 3: Have the child touch the colored part of the top pumpkin. Ask, "Is one half of the pumpkin colored? (no)." Ask the same question for the second pumpkin. (yes) Have the child put a mark on the second pumpkin.

Panels 4-8: Have the child mark the one object in each panel that shows one half colored.

OBJECTIVE

To recognize objects separated into thirds

PACING

- Level A 159 All (guided)
160 All
- Level B 159 All (1-5 guided)
160 All
- Level C 159 All (1-4 guided)
160 All

VOCABULARY

thirds

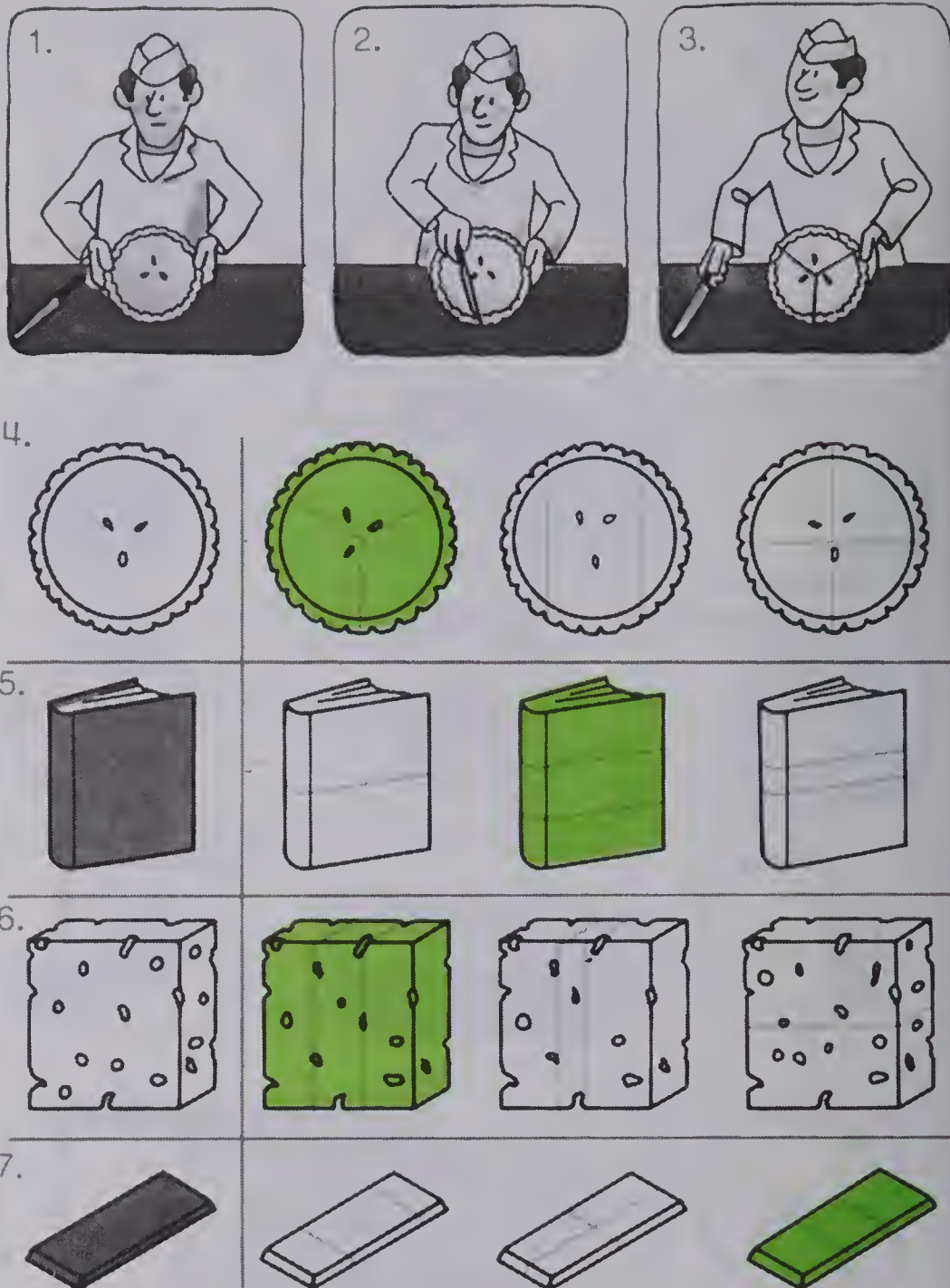
MATERIALS

a candy bar

SUGGESTIONS

Initial Activity Create a story about three children who want to share a candy bar so that each part will be the same size. Then cut a candy bar into three parts that are the same size and stress that when a whole is cut into three parts that are the same size, these parts are called "thirds." Place the thirds together again, asking, "How many thirds make a whole? (3)"

Thirds



Concept of thirds of pictures (one hundred fifty-nine) 159

Using the Book Panels 1-3: Have the child describe each picture. Ask, "Into how many pieces has the pie been cut? (3). Is each piece the same size? (yes) What are these parts called? (thirds)"

Panel 4: Direct the child's attention to the uncolored pictures of the pies. Have the child touch the pies that are separated into three pieces by the red marks. (first and second) Ask, "Which pie has three pieces the same size? (first) Has the first pie been separated into thirds? (yes)" Have the child color the pie that has been separated into thirds. Discuss why some pictures are not separated into thirds. (The three parts are not all the same size.)

Panels 5-7: Have the child color the one picture in each panel that shows the object separated into thirds by the red lines on the figure.

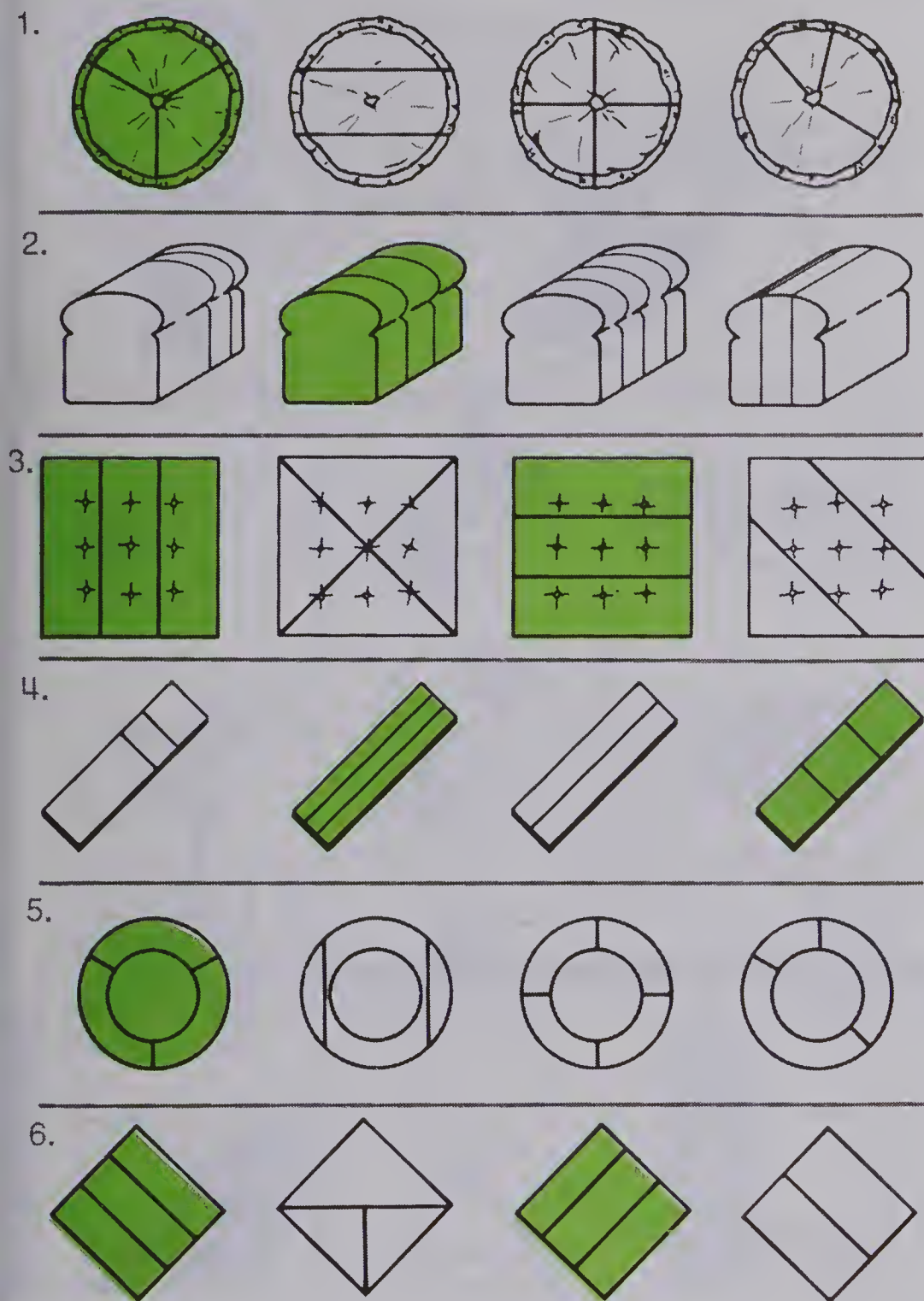
ACTIVITIES

1. Show a sheet of paper separated into thirds by dashed lines. Elicit from the child that the paper shows three parts of the same size which are called thirds. Have the child cut the paper along the dashed lines. Then have the child fit each piece one on top of another to check that the parts are the same size. Now, use a sheet of paper that is not separated into thirds and have the child check this by cutting and attempting to fit the parts one on top of another.

2. Prepare 6 cm by 12 cm pieces of 2 cm grid paper. Challenge the child to show where to mark the paper to show thirds. Use other pieces of grid paper, but have the child mark the paper on the blank side.

3. Continue Bulletin Board suggestion 1 in the Chapter Overview. Show thirds on it.

4. Give several rectangular pieces of paper to the child. Challenge the child to fold the paper to show thirds. Then have the child draw lines along the creases and cut to check.



160 (one hundred sixty) Practice

Using the Book Panels 1-6: In each panel, have the child color each figure that shows the object separated into thirds by the lines on the figure.

OBJECTIVE

To recognize one third of a whole

PACING

- Level A 161 All (1-5 guided)
162 All (box guided)
Level B 161 All (1-4 guided)
162 All (box guided)
Level C 161 All (1-3 guided)
162 All (box guided)

VOCABULARY

one third

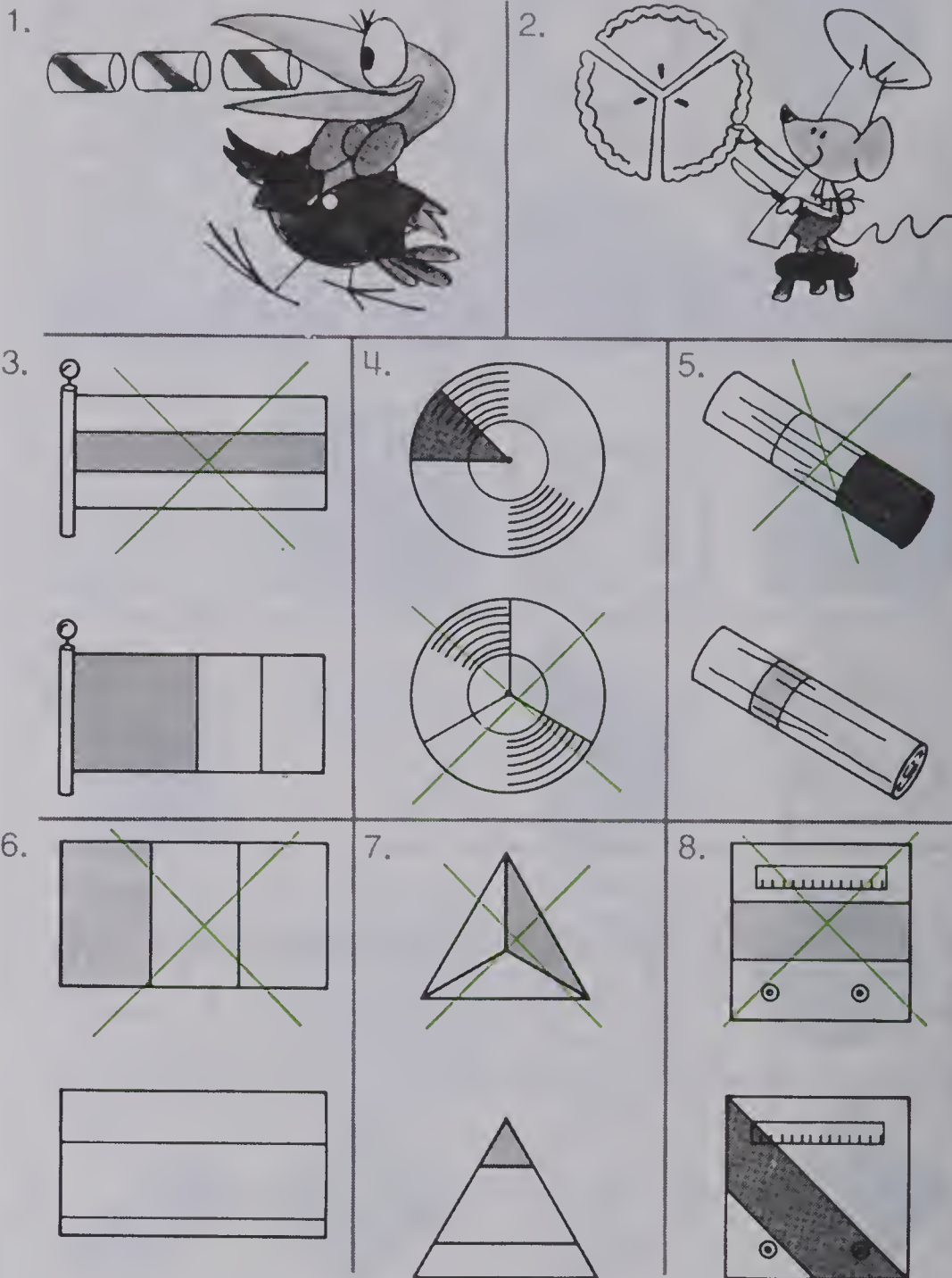
MATERIALS

large pizza pie made out of construction paper

SUGGESTIONS

Initial Activity Cut a large pizza pie out of construction paper. Cut the pie into thirds and then guide the child in placing one third on top of another to show the three parts are all the same size. Elicit from the child that three parts that are the same size are called thirds. Show just one of the parts and explain that it is one of the thirds, so it is called "one third." Place the three parts together again as a whole. Ask, "How many thirds are there in a whole? (3)"

One Third



Concept of one third (one hundred sixty-one) 161

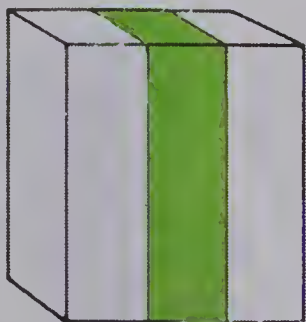
Using the Book Panel 1: Say, "The candy stick has been separated into 3 parts." Ask, "Is each part the same size? (yes) What do we call these parts? (thirds) How many parts is the crow eating? (one)" Say, "The crow is eating one third of the candy stick." Ask, "How many thirds make a whole? (3)"

Panel 2: Repeat the procedure above.

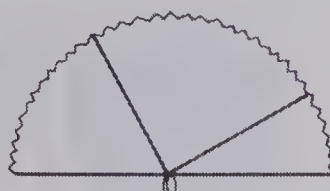
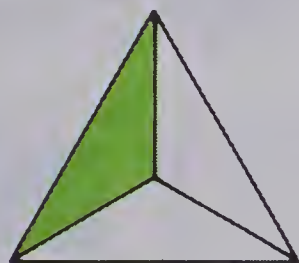
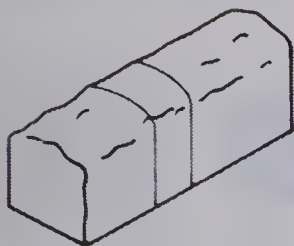
Panel 3: Have the child touch the colored part of the top flag. Ask, "Is one third of the flag colored? (yes)" Ask the same question of the second flag. (no) Have the child explain why the answer is no. Have the child put a mark on the top flag.

Panels 4-8: Have the child mark the one object in each panel that shows one third is colored.

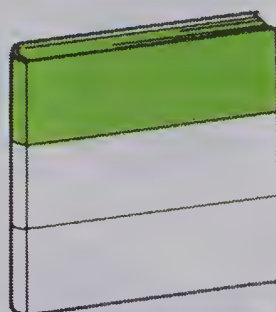
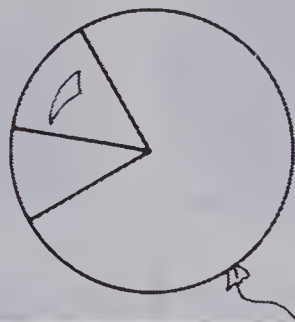
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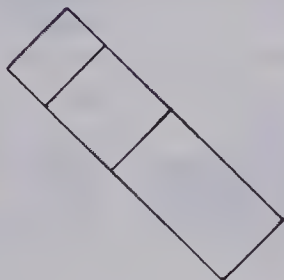
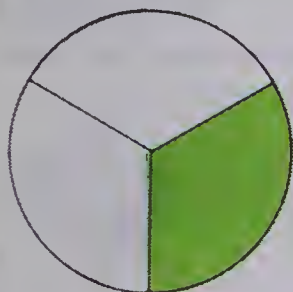
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3.



Activity



162 (one hundred sixty-two) Practice • Activity: Showing one third

ACTIVITIES

1. Duplicate a worksheet of pictures, some separated into thirds and some not. Have the child identify those that are separated into thirds and then color in one third.

2. Have the child put pictures on the flannel board, then have the child use yarn to divide the object to show thirds.

3. Prepare 2 cm strips cut from 2 cm grid paper. Provide the child with a 6 cm and 12 cm strip. Challenge the child to mark each strip into thirds and color one third of the strip.

4. Display a paper plate separated into thirds. Have the child verify that the plate shows thirds by cutting and stacking the pieces. Write the numeral $\frac{1}{3}$ on one section and have the child copy it on the others.

Using the Book Panel 1: Have the child look at the box. Ask, "Has the box been separated into thirds? (yes)" Ask the child to color one third of the box. Ask, "Is there another figure that shows thirds? (yes) Color one third of it."

Panels 2-3: For every picture that shows thirds, have the child color one third. Discuss why some pictures do not show thirds.

Activity: Prepare dittos of the diagrams shown in the activity. Have the child cut out each shape and then cut each shape on the heavy lines. For each shape, the child is to fit the pieces one on top of another, if possible, to show thirds. If a shape has been separated into thirds, have the child color one third of the shape in the book. (Rather than prepare dittos, you might have the child cut out the figures on the pupil page.)

OBJECTIVE

To recognize objects separated into fourths

PACING

- Level A 163 All (guided)
164 All
- Level B 163 All (1-5 guided)
164 All
- Level C 163 All (1-4 guided)
164 All

VOCABULARY

fourths

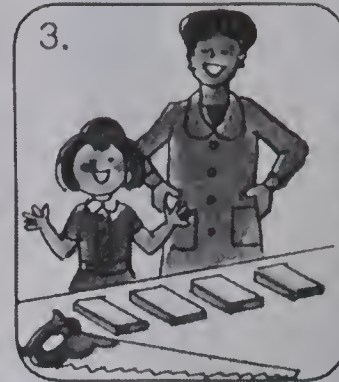
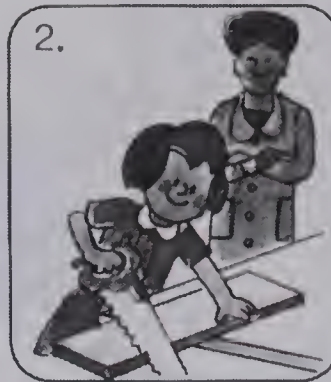
MATERIALS

rectangular sheets of paper

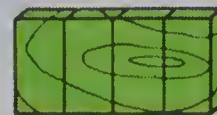
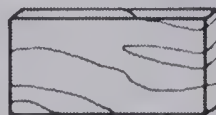
SUGGESTIONS

Initial Activity Fold a sheet of paper to make creases that separate the sheet into fourths. Have the child follow your model, then color the creases red. Develop the idea that if an object is separated into four parts of the same size then the object is separated into fourths.

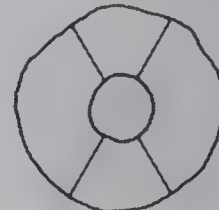
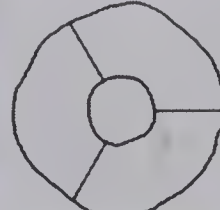
Fourths



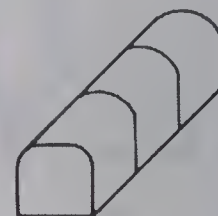
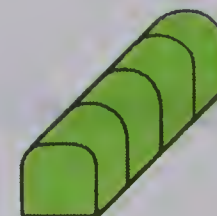
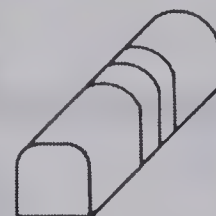
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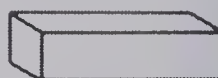
5.



6.



7.



Concepts of fourths of pictures (one hundred sixty-three) 163

Using the Book Panels 1-3: Ask the child to describe each picture. Then ask, "Into how many pieces has the board been cut? (4) Is each piece the same size? (yes) What are these parts called? (fourths)"

Panel 4: Direct the child's attention to the uncolored pictures of the board. Ask, "Which board has been separated into four parts? (second) Is each part the same size? (yes) Has the second board been separated into fourths? (yes)" Have the child color the board that has been separated into fourths.

Panels 5-7: Have the child color the pictures that show the object separated into fourths. Discuss why some pictures do not show fourths.

ACTIVITIES

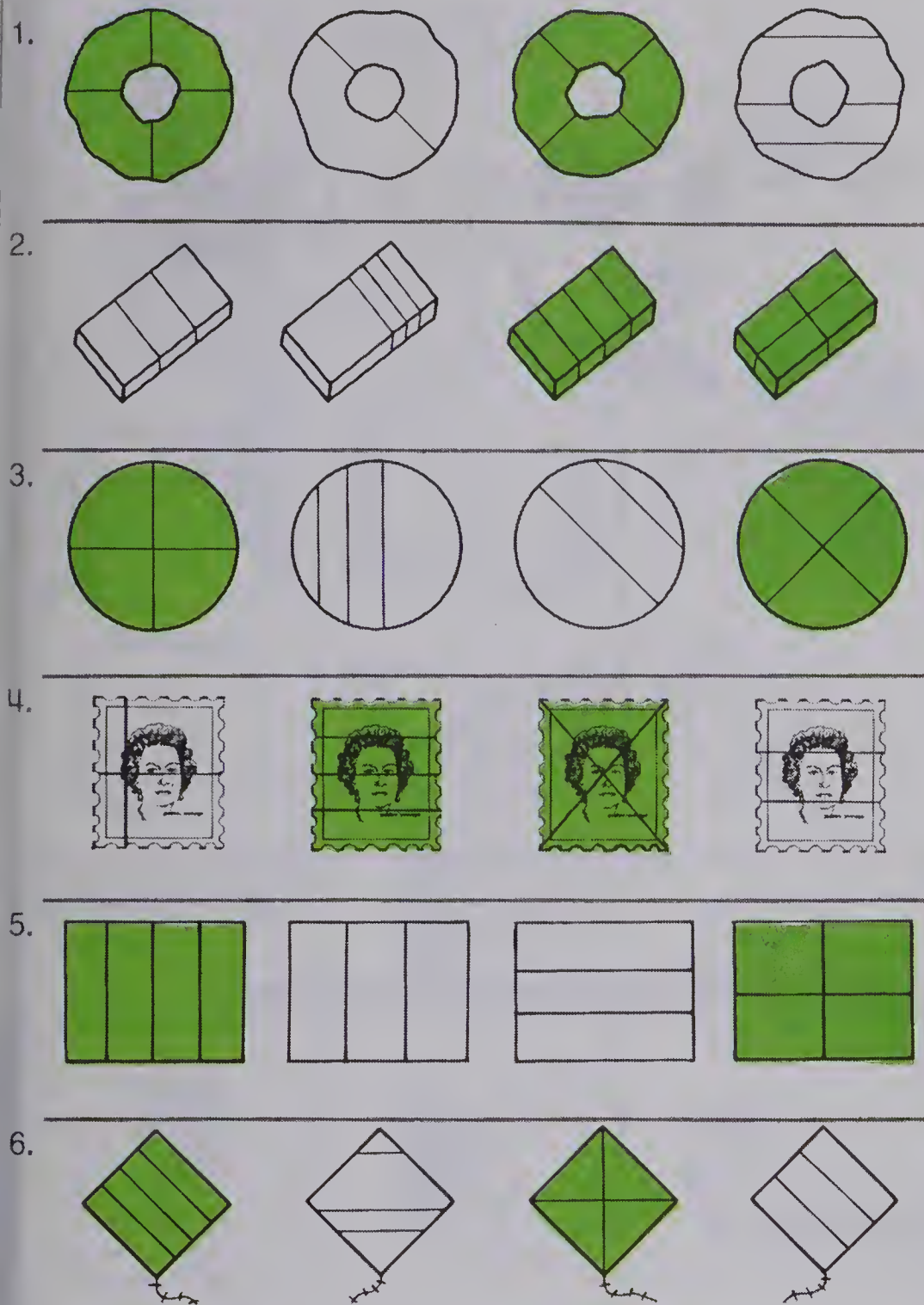
1. Use a paper plate separated into fourths by red marks. Cut another plate into fourths. The child may use one of the fourths to verify that the parts of the first plate are the same size. Ask, "Do the red marks separate the plate into parts of the same size?" Tell the child the red marks separate the plate into fourths.

2. Lunch time or snack time provides wonderful opportunities for demonstrating the concept of fourths. Cookies, fruits, pies, and sandwiches may be cut into fourths.

3. Display pictures, some separated into fourths and some not. Have the child identify those separated into fourths.

4. Continue Bulletin Board suggestion 1 in the Chapter Overview. Show fourths on it.

5. Give the child circular pieces of paper and challenge the child to fold it so that the creases show fourths. Then have the child draw lines on the creases.



164 (one hundred sixty-four) Practice

Using the Book Panels 1-6: In each panel, have the child color each figure that shows the object separated into fourths by the lines on the figure.

OBJECTIVE

To recognize one fourth of a whole

PACING

Level A 165 All (1-5 guided)
166 All (pie guided)
Level B 165 All (1-4 guided)
166 All (pie guided)
Level C 165 All (1-3 guided)
166 All (pie guided)

VOCABULARY

one fourth

MATERIALS

paper plate, scissors

SUGGESTIONS

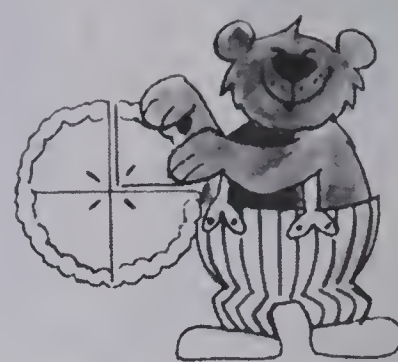
Initial Activity Show the child a paper plate separated into four equal parts by dashed lines. Have the child cut along the dashed lines. Guide the child in placing one fourth on top of another to show that the four parts are all the same size. Elicit that four parts that are the same size are called fourths. Show just one of the parts and explain that it is one of the fourths so it is called, "one fourth." The four parts may be placed together again. Ask, "How many fourths are there in a whole? (4)"

One Fourth

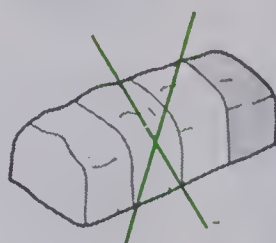
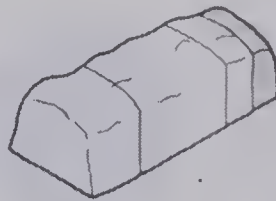
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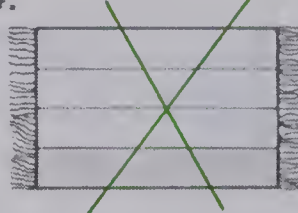
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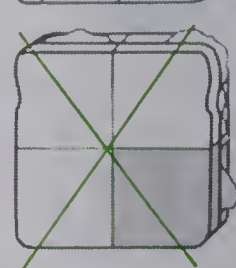
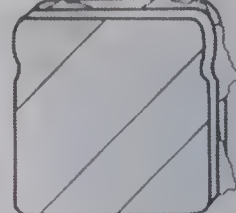
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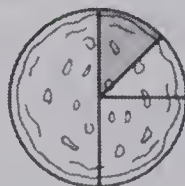
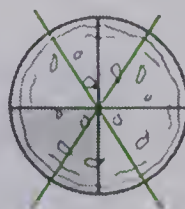
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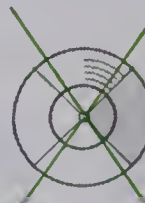
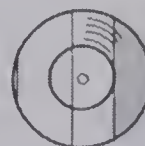
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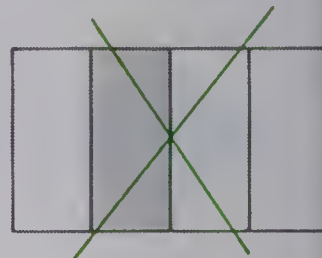
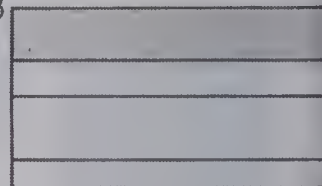
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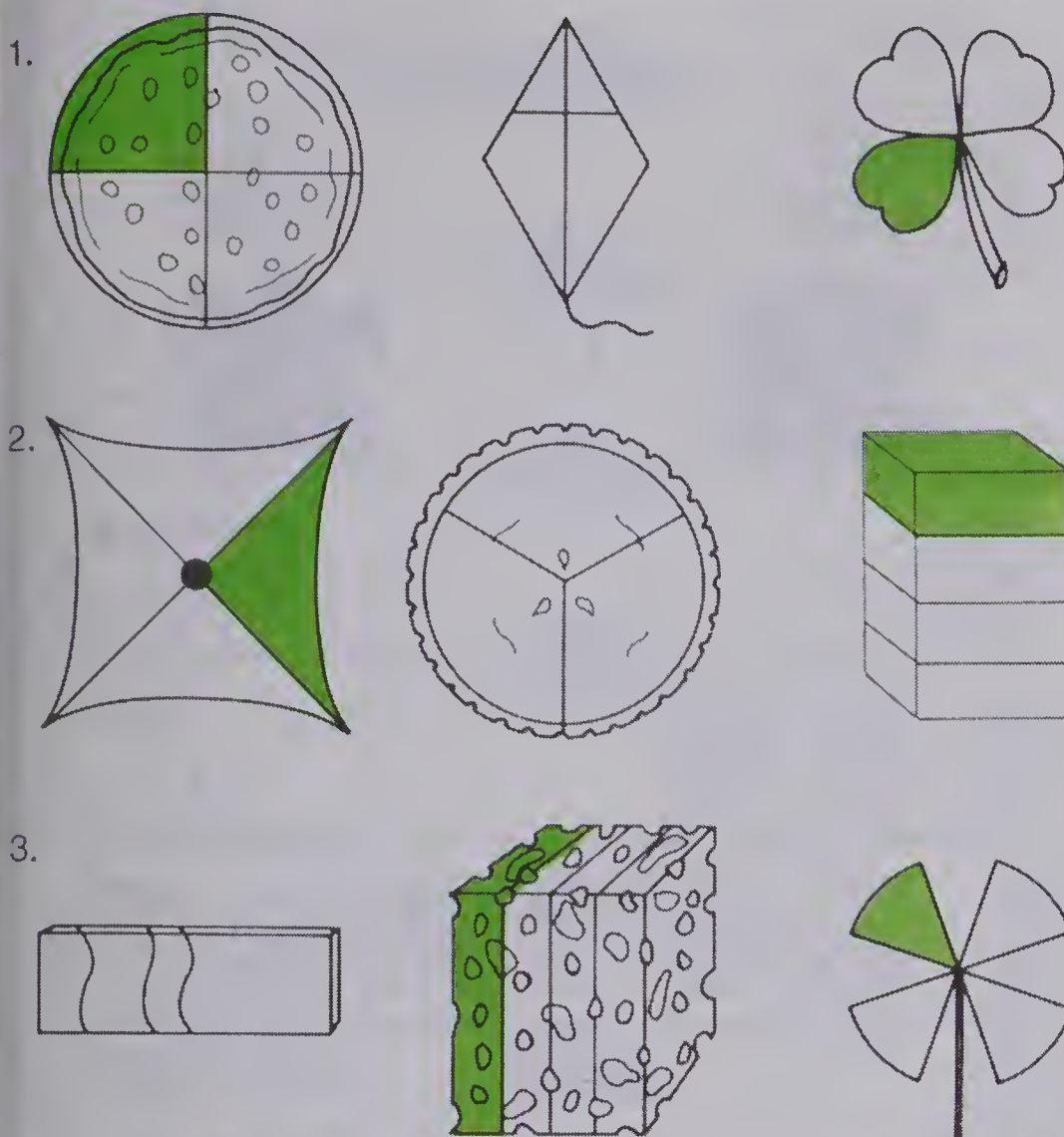
Concept of one fourth (one hundred sixty-five) 165

Using the Book Panel 1: Ask, "Does the candy stick show fourths? (yes) What part is the monkey taking? (one fourth) How many fourths are left? (three) How many fourths make a whole? (four)"

Panel 2: Repeat the procedure above.

Panel 3: Have the child put a finger on each loaf of bread. Ask, "Are both loaves separated into four parts? (yes) Which one has one fourth colored? (bottom loaf)" Have the child mark the loaf that shows one fourth colored.

Panels 4-8: Have the child mark the one object in each panel that shows one fourth colored.



ACTIVITIES

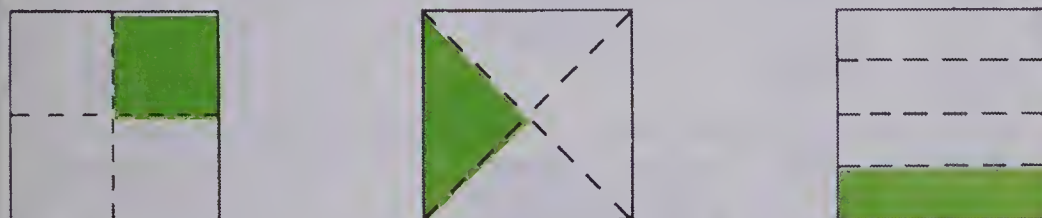
1. Prepare a series of file cards, some that show fourths and some that do not. Have the child separate the cards that show fourths from those that do not. Have the child color one fourth on each card that shows fourths.

2. Have the child put objects on the flannel board. Then have the child use yarn to show fourths.

3. Prepare file cards: two cards separated into halves, two into thirds, and two into fourths. Using the cards, have the child play Concentration as described in the Activity Reservoir.

4. The children might find it fun to play a game with paper plates. Use a plate cut into halves, another cut into thirds, and one cut into fourths. Mix up the parts. Show the child one third of a paper plate. Have the child guess whether it is one half, one third, or one fourth of a plate. Then have the child match it with others to make a complete paper plate. The child then puts the other parts together to make two more paper plates.

Activity



166 (one hundred sixty-six) Practice • Activity: Showing one fourth

Using the Book Panel 1: Have the child place a finger on the pie. Ask, "Are all the pieces the same size? (yes) Does this picture show fourths? (yes)" Have the child color one fourth of the pie. Explain why the kite does not show fourths. Ask, "Is there another figure that shows fourths? (yes) Color one fourth of it."

Panels 2-3: For every picture that shows fourths, have the child color one fourth. Discuss why some pictures do not show fourths.

Activity: Using a paper cutter, cut rectangular pieces of paper into squares. Provide each child with a square. Have the child fold the figure to show fourths (4 squares). Then have the child experiment with folding the square another way to show fourths (4 triangles). Finally have the child fold the square into 4 rectangles. This activity will help the child understand that a square can be divided in different ways to show fourths. Then the child can color one fourth of each picture in the book.

OBJECTIVES

- To recognize a penny and a nickel
- To know how many cents each of the coins is worth
- To count to find the value of sets of coins showing 9 cents or less

PACING

- Level A 167 All (1-6 guided)
168 All (1st one guided)
- Level B 167 All (1-4 guided)
168 All (1st one guided)
- Level C 167 All (1-3 guided)
168 All (1st one guided)

VOCABULARY

penny, nickel, cent, cents, coin

MATERIALS

9 pennies, 1 nickel, card with ¢ sign on it

BACKGROUND

See Item 3 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display a penny. Discuss its color and size. Display the ¢ sign. Elicit that the coin is a penny and that it is worth 1¢. Show 2 pennies and elicit that they are worth 2¢. Continue showing one more penny until you reach 5¢. Then display a nickel and discuss its color and shape. Elicit that the coin is a nickel and that it is worth 5¢. Keep the 5 pennies and 1 nickel next to each other. Discuss the idea that 5 pennies have the same value as 1 nickel.

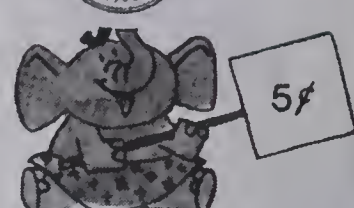
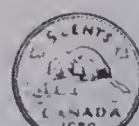
Display sets of pennies and nickels worth 9¢ or less. Have the child tell how much each set of coins is worth.

Counting Money

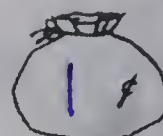
1.



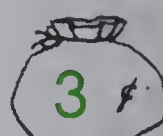
2.



3.



4.



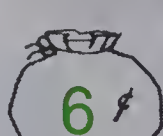
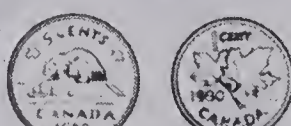
5.



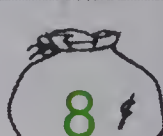
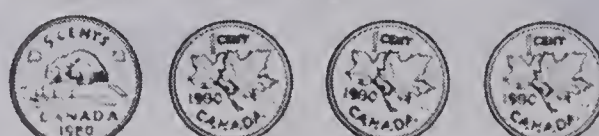
6.



7.



8.



Counting money penny, nickel (one hundred sixty-seven) 167

Using the Book Panel 1: Ask, "What is the elephant balancing on its trunk? (a penny) How much is a penny worth? (one cent)"

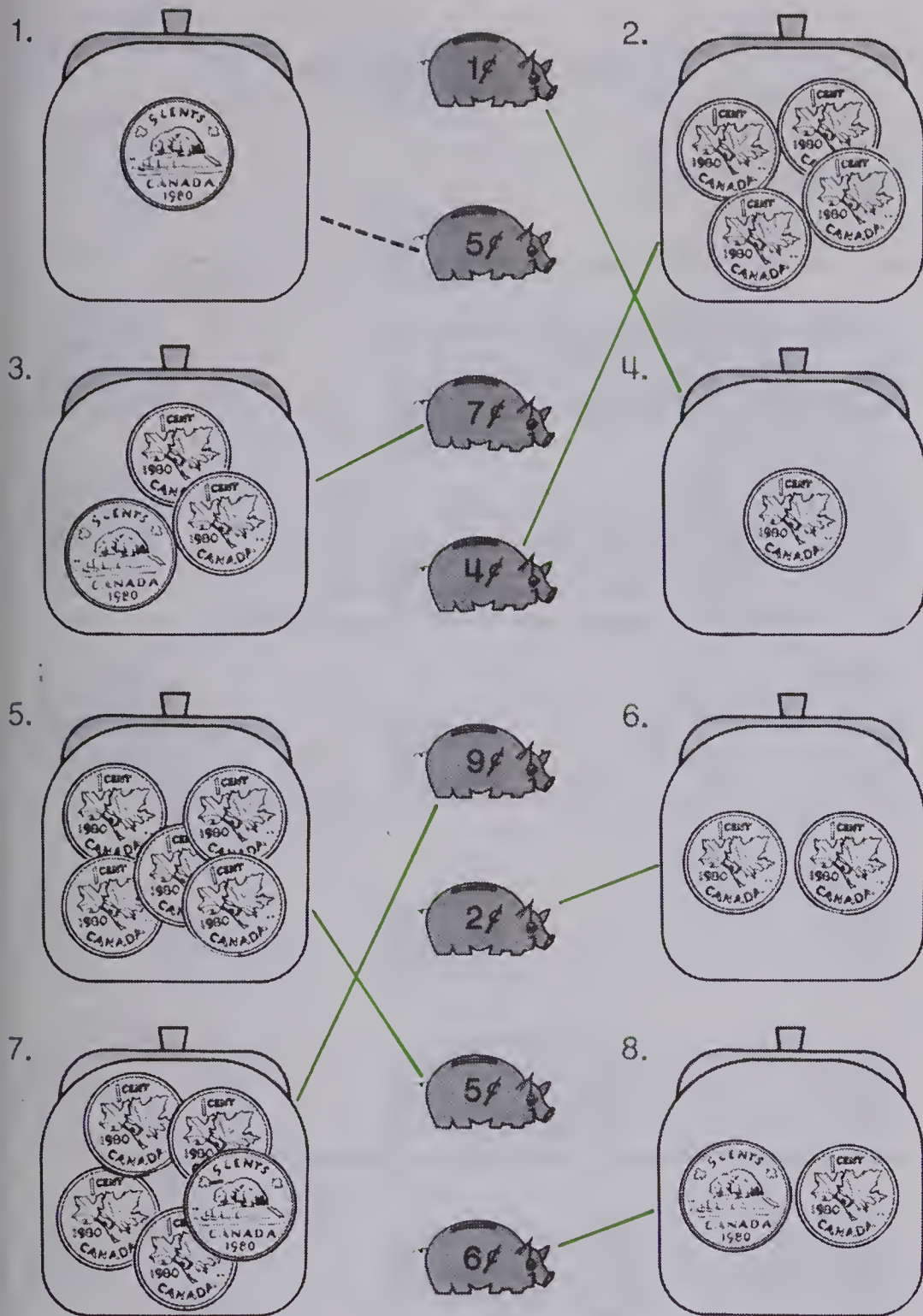
Panel 2: Ask, "What is this elephant balancing on its trunk? (nickel) How much is a nickel worth? (five cents) How many pennies are worth the same as one nickel? (5)"

Panel 3: Have the child put a finger on the picture of the penny and trace the 1 on the money bag and say 1 cent.

Panels 4-5: Have the child write the amount each is worth on the money bag.

Panel 6: Ask, "How many cents is a nickel worth? (5)" Have the child write 5 on the money bag and say 5 cents.

Panels 7-8: Remind the child that a nickel is worth 5 cents. Have the child put a finger on the nickel and say 5 cents, then count on to determine how much money is shown. Have the child write the answer on the money bag.



168 (one hundred sixty-eight) Practice

ACTIVITIES

1. Place 9 pennies and 2 nickels on the desk. Have the child select the proper coins when you state an amount. Encourage the child to select the nickel where the amount is five cents or more.

2. Start Bulletin Board suggestion 3 in the Chapter Overview. Show 1¢ and 1 penny, 5¢ and 5 pennies, 1 nickel.

3. Display pictures of articles with price tags on them. Have the child select coins to pay for the desired article.

4. Have two children put price tags from 1¢ to 9¢ on pictures of articles. Then have them exchange pictures with the same value. Have each show a set of coins that would buy the articles.

5. Have the child play Concentration as described in the Activity Reservoir. A match would be 8¢ and a card with a nickel and 3 pennies.

Using the Book Panel 1: Have the child put a finger on the nickel in the purse. Ask, "How much is a nickel worth? (5 cents) To which picture of a piggy bank is the purse connected? (the 5 cent pig)" Have the child trace the dashed line connecting the purse and the pig.

Panels 2-8: Explain that each purse is to be connected to a piggy bank that shows how much the set of coins is worth. Have the child complete the page by drawing the connecting lines.

OBJECTIVES

To identify a dime and know how many cents it is worth

To count to find the value of sets of coins showing 24 cents or less

PACING

- Level A 169 All (1-6 guided)
170 All (1st one guided)
Level B 169 All (1-4 guided)
170 All (1st one guided)
Level C 169 All (1 guided)
170 All (1st one guided)

VOCABULARY

dime

MATERIALS

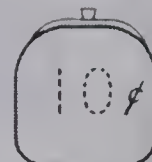
24 pennies, 4 nickels, 2 dimes

SUGGESTIONS

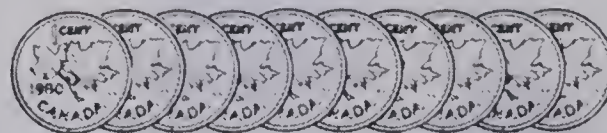
Initial Activity Display pennies and nickels. Review the name and value of each coin. Elicit the idea that a nickel is worth five pennies. Display a dime and discuss it's color and size. Elicit that the coin is a dime and it is worth ten cents. Show a dime, 2 nickels, and 10 pennies. Develop the idea that all the sets have the same value.

Counting Money

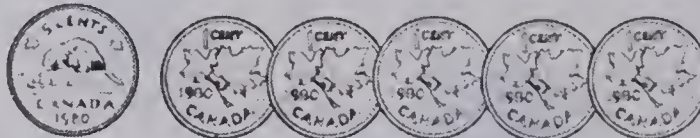
1.



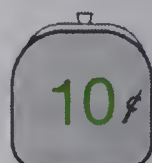
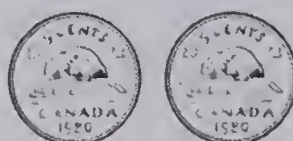
2.



3.



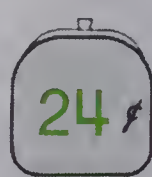
4.



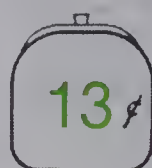
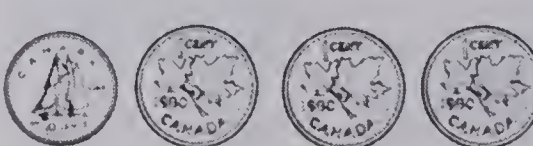
5.



6.



7.

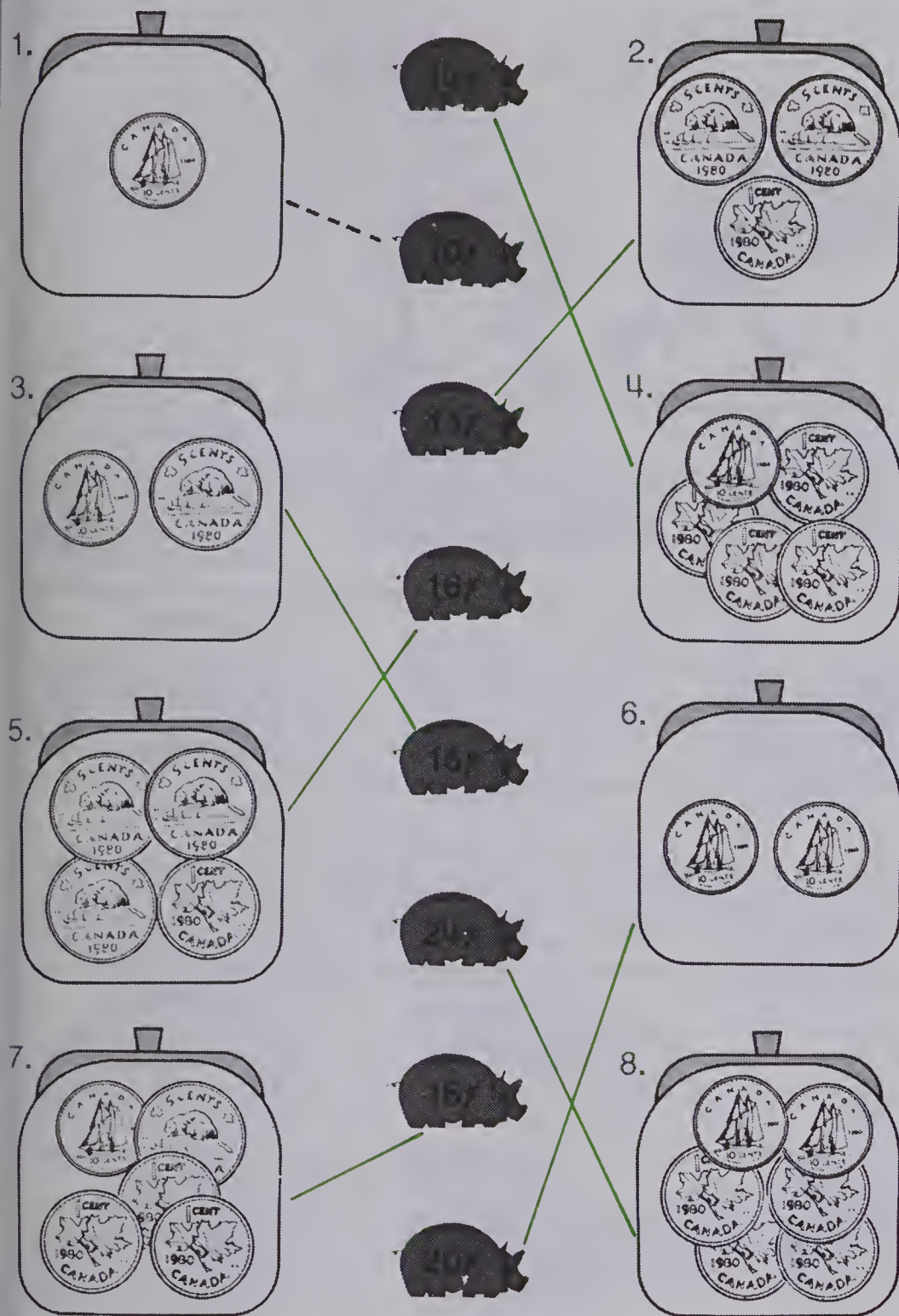


Counting money: dime (one hundred sixty-nine) 169

Using the Book Panel 1: Have the child point to the coin. Ask, "What coin is shown? (dime) How much is it worth? (10 cents)" Have the child trace the ten on the purse and say 10 cents.

Panels 2-4: Ask the same questions and have the child write the value of the coins on the picture of the purse. Ask questions similar to, "Are 2 nickels worth more than one dime? (no)"

Panels 5-7: The child is to complete the page by writing how many cents each set of coins is worth.



170 (one hundred seventy) Practice

ACTIVITIES

1. Display sets of coins worth 24¢ or less on the desk and have the child tell how much each set is worth. Then have the child select coins that are worth a given amount. Have the child continue this activity with another child. Check frequently.

2. Continue Bulletin Board suggestion 3 in the Chapter Overview. Have the child put up the combinations for 10 cents.

3. Once again use pictures of articles the children are familiar with and put price tags on each article. Have the child select coins from a dish to "pay for" the article selected.

4. Have the child play Bingo as described in the Activity Reservoir. Fill the cells with amounts of 10¢ or less. Hold up or use an overhead transparency to show combinations of coins. The child covers the appropriate cell for the pictured coins.

5. Set 2 columns on the flannel board. One column should have only objects, the other only price tags with varying amounts. Have the child match an object with the appropriate price tag. Then have the child show the proper set of coins.

Using the Book Panel 1: Have the child put a finger on the purse with the dime, then put another finger on the piggy bank to which it is connected. Ask, "How many cents are in the piggy bank? (10) Is a dime worth 10 cents? (yes)" Tell the child that is why the purse and piggy bank are connected and have the child trace the dashed line.

Panel 2: Have the child put a finger on the purse. Ask, "How much money is in the purse? (11¢)" Have the child locate the piggy bank that shows 11 cents, then draw a line connecting the purse and the piggy bank.

Panels 3-8: The child is to complete the page by drawing a line connecting a purse and piggy bank showing the same amount.

OBJECTIVES

To identify a quarter and know how many cents it is worth
To count to find the value of sets of coins showing 30 cents or less

PACING

Level A All (1-5 guided)
Level B All (1-4 guided)
Level C All (1-3 guided)

VOCABULARY

quarter

MATERIALS

1 quarter, 25 pennies, 3 dimes, 9 nickels

SUGGESTIONS

Initial Activity Introduce the quarter. Develop the idea that a quarter is worth 25 cents. Use sets of pennies, nickels, and dimes to point out the various sets of coins that are worth 25 cents.

ACTIVITIES

1. Have the child count by 1's, 5's, and 10's using pennies, dimes, and nickels.
2. Complete Bulletin Board suggestion 3 with the addition of the combinations for 25¢.
3. Have the child count out several sets of paper coins worth 25¢ and paste them on a piece of paper for a display.
4. Have the child play Stop the Magician as described in the Activity Reservoir. Use sets of coins to be identified, as the problems.

Counting Money

1.

2.

3.

4.

5.



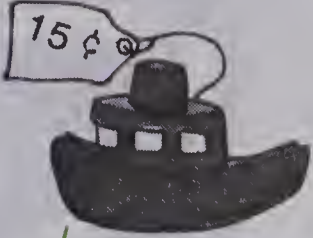
6.




7.

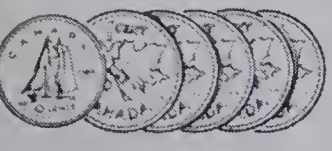

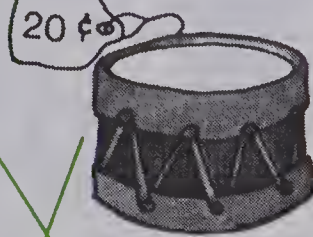
Counting money quarter (one hundred_seventy-one) 171



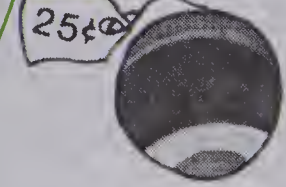
Using the Book Panel 1: Ask, "What coin is the frog holding up? (a quarter)"
Panel 2: Ask, "How many pennies does the frog have? (25)" Have the child trace the 25. "Do both frogs have the same amount of money? (yes) How much? (25¢)"
Panel 3: Have the child count how much money is shown. You may have the child count, "10 cents, 20 cents, 21, 22, 23, 24, 25 cents," and write the total on the piggy bank.
Panels 4-7: Have the child use a procedure similar to Panel 3.
After the page is complete, ask, "What coin has the same value as the coins in panel 2? panel 3? panel 4? panel 5? and panel 6? (each is worth a quarter)"


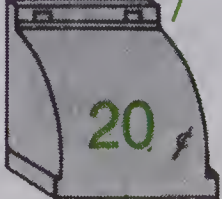
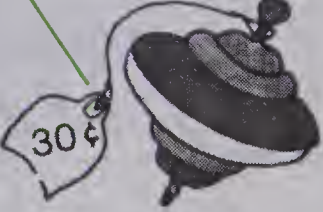
Spend Some Money

1.   

2.   

3.   

4.   

5.   

172 (one hundred seventy-two) Counting and buying things

OBJECTIVES

To count money and write how much
To find an object that can be bought for
each amount of money

PACING

Level A 1-3 (guided)
Level B All (1 guided)
Level C All (1 guided)

VOCABULARY

price

MATERIALS

several articles or pictures with price tags
showing prices to 30¢, a quarter, 30
pennies, 5 nickels, 3 dimes

SUGGESTIONS

Initial Activity Display the articles
with price tags. Have the child show a
combination of coins that equals the
price of each article.

ACTIVITIES

1. Have the children work in groups of
three. One child gives a number less
than 35. The other two children show
sets of coins whose value is the number.

2. Have the children work in groups
of 3. The leader gives a number between
10 and 40. The other two children show
sets of coins equal to the number.

3. You might wish to introduce the
half dollar. Adapt the activity above to
include 50¢.

Using the Book Panel 1: Ask, "What is the value of this set of coins? (8 cents)" Have the child trace the 8 on the cash register and say 8 cents. Ask, "Which item costs 8 cents? (the cupcake)" Point out that the cash register and the cupcake are connected. Then have the child trace the dashed line between them.

Panels 2-5: Have the child write the value of each set of coins on the cash register. Then have the child connect the cash register with the object that costs the amount shown on that cash register.

OBJECTIVE

To select a set of coins of a given value

PACING

- Level A All (1-4 guided)
- Level B All (1-4 guided)
- Level C All (1-4 guided)

MATERIALS

quarters, dimes, nickels, pennies

SUGGESTIONS

Initial Activities 1. Repeat the Initial Activity on page 172. Require that all possible combinations for a certain price be found.

2. You might discuss what a printer does. Ask the child to name different types of printed material. Point out that printers operate machines to print material.

ACTIVITIES

1. Have the child list several sets of coins whose value is 25¢ for instance, N N N D. Challenge the child to show five such sets. Allow child to use coins and make substitutions.

2. Use a stamp and ink pad to demonstrate the basics of printing.

3. Give the child a list of values such as 25¢ and have the child name the set of coins for the given value. Require using the fewest coins.

4. If a ditto machine is available, you might wish to show it in operation and discuss how it works.

5. Use the activity for the A level but require that all the possible sets of coins for a value be listed. (There are 13 different sets for 25 cents.)

6. Encourage some children to construct a poster for the Bulletin Board with different materials that are printed. (newspaper, magazine, book, etc.)

Printers

1.

2.

3.

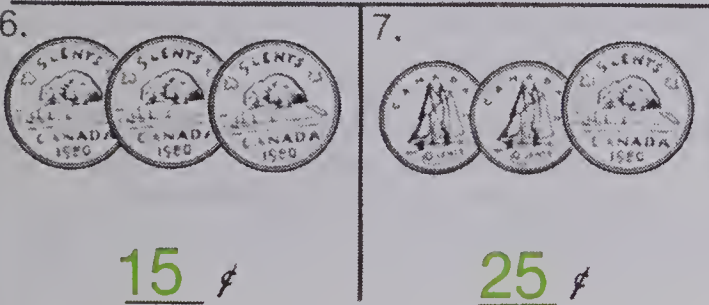
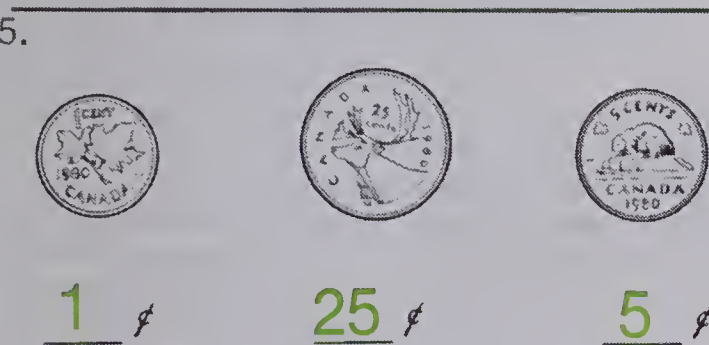
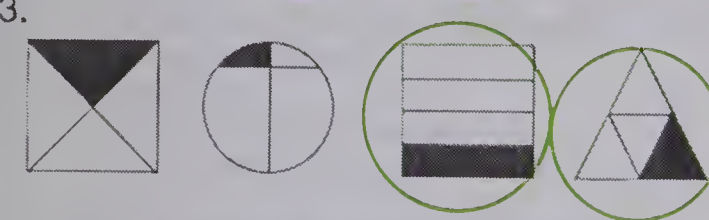
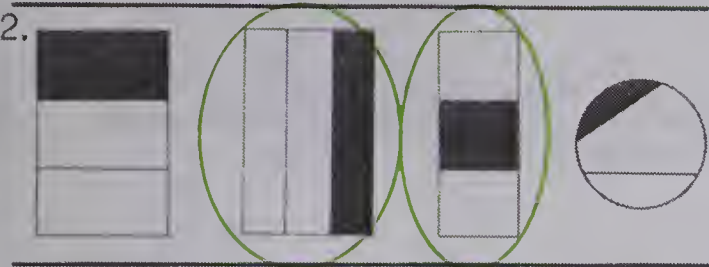
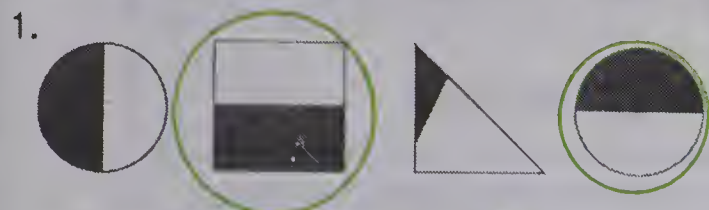
4.

Practice (one hundred seventy-three) 173

Using the Book Discuss the picture at the top of the page. Explain that the printing press is used to print books and magazines. See Career Awareness in the Chapter Overview.

Panel 1: Ask, "How much does the comic book cost? (7¢) Look at the set of coins on the left side of the comic book. What coins are in that set? (nickel, penny, penny) How much is 1 nickel and 2 pennies? (7¢) Look at the set of coins on the right. What coins are in that set? (nickel, nickel, penny) How much is 2 nickels and 1 penny? (11¢)" Tell the child to trace the line to the set of coins that shows 7¢.

Panels 2-4: Tell the child to read the cost of the article. Next, have the child look at each set of coins and decide which set of coins is the same amount as the cost of the article. Finally, have the child draw a line from the article to the appropriate set of coins.



174 (one hundred seventy-four) Chapter 8 Test

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A	All
Level B	All
Level C	All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Have the child practice showing various times on the demonstration clockface.
2. Give two children various combinations of paper coins. Have them exchange amounts that are the same.
3. Have the child play Concentration as described in the Activity Reservoir. A match can be two circles with one half of each shaded, two squares with one third of each shaded, etc.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: Ask, "What part of the first figure is shaded?" (one half) "Draw a ring around the remaining figures that show one half shaded." [pages 155-158 A]

Panel 2: Adapt the procedure in panel 1 for one third. [pages 159-160 A]

Panel 3: Adapt the procedure in panel 1 for one fourth. [pages 165-166 A]

Panel 4: Instruct the child to color one half of each figure. [pages 155-158 A]

A]

Panels 5-8: Have the child write the value of each coin or set of coins in the space. [pages 167-173 C]

CHAPTER 9 OVERVIEW

LEVEL 9

The basic addition and subtraction facts are extended to include 9 and 10. The art theme of this chapter is "Foreign Lands."

OBJECTIVES

- A To add sums 10 and less
- B To subtract from 10 and less
- C To add three addends in vertical form, sums 10 and less
- D To solve mini-problems

VOCABULARY

parentheses 215

BACKGROUND

When adding three numbers, parentheses are used to show which pair of numbers to add first. For example:

$$(2 + 1) + 3$$

$$3 + 3$$

$$6$$

$$2 + (1 + 3)$$

$$2 + 4$$

$$6$$

This illustrates the Grouping Property of Addition (also called the Associative Property of Addition).

MATERIALS

6 each of 3 different colored clothespins
coathanger
10 red blocks
10 blue blocks
10 green blocks
dot set cards, for sum to 8, with 3 sets of dots on each card
number line
horizontal addition and subtraction
practice cards for sum to 10
10 dolls
9 toys
12 lollipops
scissors
10 pictures of flowers and 10 pictures of flower pots
10 milk containers
10 cookies
pennies, nickels, dimes, quarters
articles with price tags 10¢ or less

CAREER AWARENESS

Lunchroom Workers [192]

As customers on line pass by a food counter, it is the lunchroom worker who serves the food. Lunchroom workers also help in preparing food before and during business hours. Besides serving food, they have to replace the food as it diminishes. In some lunchrooms, these workers handle money at the end of the day. This is a career where there is a great deal of interaction with people.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that lunchroom workers must keep a cafeteria running smoothly and efficiently. Lunchroom workers prevent chaos at lunch time in many schools.

Photo description: This lunchroom worker is making sure that each child has a tray and the proper eating utensils.

BULLETIN BOARD

1. The art of this chapter focuses on "Foreign Lands." For example, page 180 shows children from many different countries around the world. Page 177 focuses on the Chinese, and page 187 focuses on the people of Africa. The people of Spain, Mexico, Switzerland, India, Greece, Italy, Japan, Arabia, and Holland are also included in this Unit.

The children should enjoy hearing stories about the people of these countries. Stress the importance of brotherhood, cooperation between countries, and peace. Have the children work in groups and do further research on their favorite country. Have the groups present their work and then assist them in displaying it on the bulletin board.

2. A group of children might assist you in making a large map of the United States showing the outline of each state clearly. Inside each state you might write an addition or subtraction fact for sums to 10. Challenge the child to solve each example.

3. The addition table shown on page 181 should make an interesting and useful bulletin board that the children will enjoy helping you create. Assist them in explaining how to use the table. It will be very useful in working with sums to 10 and may later be extended to include sums 11-18.

OBJECTIVE

To find the sum of three addends, sums 8 or less, using the vertical form

PACING

- Level A 175 All (1-4 guided)
176 All
Level B 175 All (1-2 guided)
176 All
Level C 175 All (1-2 guided)
176 All

MATERIALS

dot set cards for sums to 8 with 3 sets of dots on each card (See Activity Reservoir.)

SUGGESTIONS

Initial Activity Display a dot card showing $2 + 1 + 3$ vertically. The child may then write the correct numeral to the left of each set showing how many members are in each. Elicit that how many there are in all is found by adding the numbers. Draw a frame as shown in Panel 1 on page 175. Have the child add $2 + 1$ and write 3 in the frame. Then have the child add 3 and 3 and write 6 as the sum of the three addends.

Display the same dot card used above. Guide the child to begin at the bottom of the column and add up, as shown in Panel 2 on page 175. The child should realize that the sum of the three addends in a column is the same, whether adding down or up the column.

Adding

1.



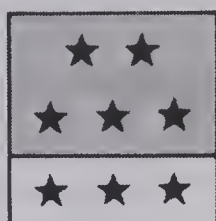
$$\begin{array}{r} 3 \\ 2 \\ + 1 \\ \hline 6 \end{array}$$

2.



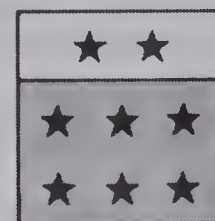
$$\begin{array}{r} 3 \\ 2 \\ + 1 \\ \hline 6 \end{array}$$

3.



$$\begin{array}{r} 2 \\ 3 \\ + 3 \\ \hline 8 \end{array}$$

4.



$$\begin{array}{r} 2 \\ 3 \\ + 3 \\ \hline 8 \end{array}$$

5. 4

$$\begin{array}{r} 4 \\ 1 \\ + 2 \\ \hline 7 \end{array}$$

4

$$\begin{array}{r} 4 \\ 1 \\ + 2 \\ \hline 7 \end{array}$$

6. 5

$$\begin{array}{r} 5 \\ 0 \\ + 3 \\ \hline 8 \end{array}$$

5

$$\begin{array}{r} 5 \\ 0 \\ + 3 \\ \hline 8 \end{array}$$

Column addition; three addends (one hundred seventy-five) 175

Using the Book Panel 1: Ask, "How many stars are in the top row? (3) How many are in the second row? (2) How many are in the bottom row? (1)" Point out that the first and second rows of stars are grouped on pink. Direct attention to the column addition and read, " $3 + 2 + 1$." Point out that the 3 and 2 are also on pink. Ask, " $3 + 2$ is what? (5)" Explain that the sum 5 is written on the pink arrow pointing down, so the next number down is then added. Say, " $5 + 1$ is 6. There are 6 stars in all." Have the child trace the 6.

Panel 2: Start at the bottom. Point out that the pink arrow is pointing up. Therefore, 1 and 2 are added first, so 3 is in the pink arrow. Have the child complete the sum. Say, "The sum is the same adding up or down."

Panels 3-4: Follow procedures similar to panels 1 and 2.

Panel 5: Point out that the arrow is pointing down so the child will be adding down. Ask, " $4 + 1$ is what?" Have the child write 5 in the pink arrow. Then ask, " $5 + 2$ is what?" Have the child write 7 below the line. Add up for the second column addition.

Panel 6: Follow procedures similar to panel 5.

1.

1	2	3	2
3	1	0	2
$\begin{array}{r} +1 \\ 5 \end{array}$	$\begin{array}{r} +2 \\ 5 \end{array}$	$\begin{array}{r} +5 \\ 8 \end{array}$	$\begin{array}{r} +3 \\ 7 \end{array}$

2.

1	2	3	2
3	1	0	2
$\begin{array}{r} +1 \\ 5 \end{array}$	$\begin{array}{r} +2 \\ 5 \end{array}$	$\begin{array}{r} +5 \\ 8 \end{array}$	$\begin{array}{r} +3 \\ 7 \end{array}$

3.

3	2	1	4	0	1
2	0	2	2	4	6
$\begin{array}{r} +3 \\ 8 \end{array}$	$\begin{array}{r} +6 \\ 8 \end{array}$	$\begin{array}{r} +5 \\ 8 \end{array}$	$\begin{array}{r} +2 \\ 8 \end{array}$	$\begin{array}{r} +4 \\ 8 \end{array}$	$\begin{array}{r} +1 \\ 8 \end{array}$

4.

0	3	6	2	1	4
1	1	0	1	3	1
$\begin{array}{r} +7 \\ 8 \end{array}$	$\begin{array}{r} +4 \\ 8 \end{array}$	$\begin{array}{r} +1 \\ 7 \end{array}$	$\begin{array}{r} +3 \\ 6 \end{array}$	$\begin{array}{r} +3 \\ 7 \end{array}$	$\begin{array}{r} +1 \\ 6 \end{array}$

176 (one hundred seventy-six) Practice

Using the Book Panel 1: Point out that the pink arrows are pointing down so the child will add down. Have the child add the first two numbers and write the sum in the pink arrow. Then have the child add the number in the arrow and the third number and write the sum below the line.

Panel 2: Point out that the pink arrows are pointing up so the child will add up. Again have the child use the pink arrow as an aid before finding the total sum of the three addends. Tell the child that each addition in this panel is the same as the addition above it in the first panel. The order of adding is different. Have the child compare the sums. Explain that when we add down, we can check our answer by adding up.

Panels 3-4: Have the child find each sum. Then have the child add in the opposite direction to check the answers. Allow the child to write the sum of the first two numbers to the side before adding the third number, if necessary.

ACTIVITIES

1. Display the following dot card:



Develop:

$$\begin{array}{r} (3 + 1) + 3 \\ + 3 \end{array}$$

$$\begin{array}{r} 3 + (1 + 3) \\ 3 + \end{array}$$

Turn the dot card so that the sets are in a column. Develop the vertical form of this addition by adapting the procedure described in Initial Activity.

2. Have the child use a mini-calculator to check the answers to panel 3 and 4 adding up and down.

3. Prepare several 9-cell grids similar to the one below using different numbers for each one.

1	2	3
2	3	1
3	1	2

4. Write a three addend addition exercise in the vertical form. Guide the child in adding down the column. Then have the child add up the column to check. If necessary, you may use dot set cards to illustrate each addition.

5. To challenge the child with work on column addition prepare exercises similar to the following:

3	□	1	5
4	2	□	□
$\begin{array}{r} +\square \\ 8 \end{array}$	$\begin{array}{r} +3 \\ 7 \end{array}$	$\begin{array}{r} +2 \\ 8 \end{array}$	$\begin{array}{r} +1 \\ 7 \end{array}$

OBJECTIVE

To complete addition sentences, sum 9
To add, sums 9 or less, in vertical form

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All

MATERIALS

9 blocks

SUGGESTIONS

Initial Activity Have the child show a set of 8 blocks, add 1 block and name the number, 9. Relate $8 + 1 = 9$, $1 + 8 = 9$ to this. Develop all related addition sentences for sum 9 using different sets of blocks.

ACTIVITIES

1. Have the child demonstrate sums of 9 using felt objects on the flannel board. The child should write an addition sentence for each sum displayed.

2. Have the child write these sentences on the next page in the Addition Book. See page 42.

9	7	8	6	5
+0	+2	+1	+3	+4
0	2	1	3	4
+9	+7	+8	+6	+5

3. Matching the Sum, as described in the Activity Reservoir, may be played. Include sums through 9.

Nine



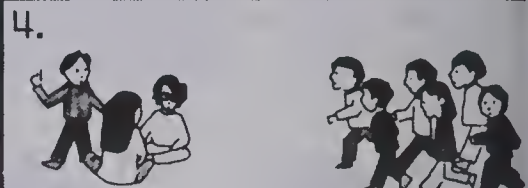
$$5 + 4 = \underline{\quad}$$



$$4 + 5 = \underline{9}$$



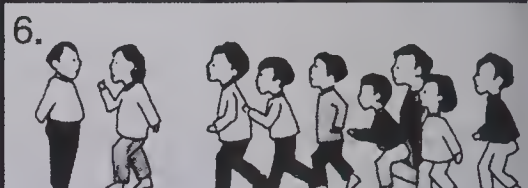
$$6 + 3 = \underline{9}$$



$$3 + 6 = \underline{9}$$



$$7 + 2 = \underline{9}$$



$$2 + 7 = \underline{9}$$



$$9 + 0 = \underline{9}$$



$$0 + 9 = \underline{9}$$

9.	8	3	1	3	7	9
	+1	+6	+8	+5	+2	+0
	9	9	9	8	9	9

Adding, sum 9 (one hundred seventy-seven) 177

Using the Book Panel 1: Say, "5 people are working in the fields. 4 people are coming. How many altogether?" Direct attention to and read, "5 plus 4 equals what?" You may have the child draw a line from 5 to the 5 working and from 4 to the 4 coming. Elicit that there are 9 in all and have the child trace the 9. Explain that 9 is the sum.

Panel 2: Have the child tell a story about this picture. Point out that the sets are the same as in the first picture but in a different order. Direct attention to $4 + 5 = \underline{\quad}$. Ask the child to draw a line from 4 to the 4 working and from 5 to the 5 coming. Ask, "How many in all?" Have the child write 9. Read, "4 plus 5 equals 9." Point out that $5 + 4 = 9$ and $4 + 5 = 9$ are related sentences.

Panels 3-8: Tell the child to look at each picture and find the sum.

1.	$\begin{array}{r} 9 \\ + 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$
2.	$\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ + 4 \\ \hline 6 \end{array}$
3.	$\begin{array}{r} 0 \\ + 9 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ + 0 \\ \hline 7 \end{array}$
4.	$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array}$	
5.	$\begin{array}{r} 0 \\ + 9 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ + 7 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	
6.	$\begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 7 \\ + 2 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	
7.	$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ + 2 \\ \hline 5 \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$	

AT HOME Choose any row of exercises to read to the child. Have the child tell you the answers.

178 (one hundred seventy-eight) Practice



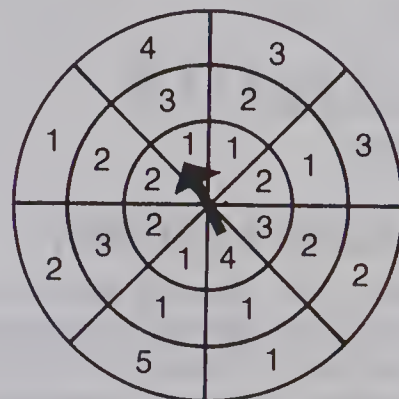
ACTIVITIES

1. Have 8 children dramatize and develop several addition groupings.

$(2 + 3) + 3$; $2 + (3 + 3)$

$(1 + 4) + 3$; $1 + (4 + 3)$

2. Prepare a wheel and spinner as shown below.



Have the child spin the dial and give the sum first from the inside out, then from the outside in. For instance for the sector indicated, the child says $1 + 3 = 4$, $4 + 4 = 8$, then $4 + 3 = 7$, $7 + 1 = 8$.

3. Prepare 3 sets of numeral cards with numerals 1-4. Have the child take one from each pile and record all the possible arrangements. If each pile has a different color, it is easier to see. The child should record each arrangement as:
 $4 + 3 + 1$, $4 + 1 + 3$, $1 + 4 + 3$
 $3 + 4 + 1$, $1 + 3 + 4$, $3 + 1 + 4$
 Elicit the idea that the sum is always the same no matter what the order or the grouping.

4. Have the child use a mini-calculator to find the sum in each grouping.

Using the Book Panels 1-7: Tell the child to add

At Home After finishing the pupil page, the child can take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To complete addition sentences for sum 10

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All

MATERIALS

10 blocks

SUGGESTIONS

Initial Activity Have the child show a set of 9 blocks, add 1 block, and name the new number, 10. Relate $9 + 1 = 10$, $1 + 9 = 10$ to this. Develop all the related addition sentences for sum 10 using different sets of blocks.

ACTIVITIES

1. Using the Dot Cards, as described in the Activity Reservoir, provide practice in addition facts to sum 10.

2. Have the child write these sentences on the next page in the Addition Book. See page 46.

9	1	3	7	
+1	+9	+7	+3	
8	2	4	6	5
+2	+8	+6	+4	+5

3. Challenge the child with the Basic Fact Wheels as described in the Activity Reservoir. Use basic facts involving 9 and 10.

Ten



$$9 + 1 = \underline{\quad}$$



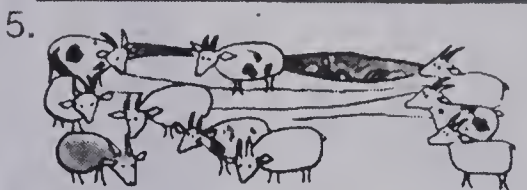
$$1 + 9 = \underline{10}$$



$$8 + 2 = \underline{10}$$



$$2 + 8 = \underline{10}$$



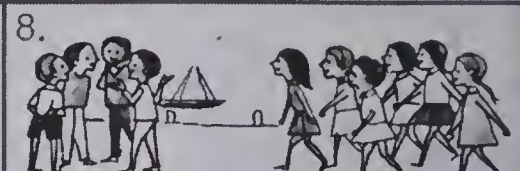
$$7 + 3 = \underline{10}$$



$$3 + 7 = \underline{10}$$



$$6 + 4 = \underline{10}$$



$$4 + 6 = \underline{10}$$

9.	5	1	3	5	2	4
	+ 5	+ 9	+ 7	+ 4	+ 8	+ 6
	10	10	10	9	10	10

Adding, sum 10 (one hundred seventy-nine) 179

Using the Book Panel 1: Say, "9 people are talking. 1 person is coming. How many altogether?" Direct attention to and read, "9 plus 1 equals what?" You may have the child draw a line from 9 to the 9 talking and from 1 to the 1 coming. Elicit that there are 10 in all and have the child trace the sum, 10.

Panel 2: Have the child tell a story about this picture. Point out that the sets are the same as in the first picture but in a different order. Direct attention to $1 + 9 = \underline{\quad}$. Ask the child to draw a line from 1 to the 1 person and from 9 to the 9 people coming. Ask, "How many in all?" Have the child write 10. To show that $1 + 9 = 10$ and $9 + 1 = 10$ are related sentences, point out that the numbers added are the same but in a different order. The sum is the same.

Panels 3-8: Have the child look at each picture and find the sum.

Panel 9: Tell the child to find each sum.

1.	$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	
2.	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	
3.	$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 9 \\ + 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$	
4.	$\begin{array}{r} 6 \\ + 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	
5.	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$	
6.	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$	
7.	$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ + 9 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	

180 (one hundred eighty) Practice, addition facts to 10

Challenge the child with the Basic Fact Wheels as described in the Activity Reservoir. Use basic facts involving 9 and 10.

EXTRA PRACTICE

Have the child add.

- | | | | | | |
|----|--|---|--|--|--|
| 1. | $\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$ | $\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$ | $\begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array}$ | $\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$ | $\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$ |
| 2. | $\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$ | $\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$ | $\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$ | $\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$ | $\begin{array}{r} 1 \\ + 7 \\ \hline 8 \end{array}$ |
| 3. | $\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$ | $\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$ | $\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$ | $\begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array}$ | $\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$ |
| 4. | $\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$ | $\begin{array}{r} 0 \\ + 9 \\ \hline 9 \end{array}$ | $\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$ | $\begin{array}{r} 5 \\ + 2 \\ \hline 7 \end{array}$ | $\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$ |
| 5. | $\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$ | $\begin{array}{r} 7 \\ + 2 \\ \hline 9 \end{array}$ | $\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$ | $\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$ | $\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$ |
| 6. | $\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$ | $\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$ | $\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$ | $\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$ | $\begin{array}{r} 9 \\ + 0 \\ \hline 9 \end{array}$ |

Using the Book Panels 1-7: Tell the child to add.

OBJECTIVES

To complete an addition table to sum 10
To add using vertical form

PACING

- Level A 181 All (guided as necessary)
182 All
- Level B 181 All (guided as necessary)
182 All
- Level C 181 All (guided as necessary)
182 All

SUGGESTIONS

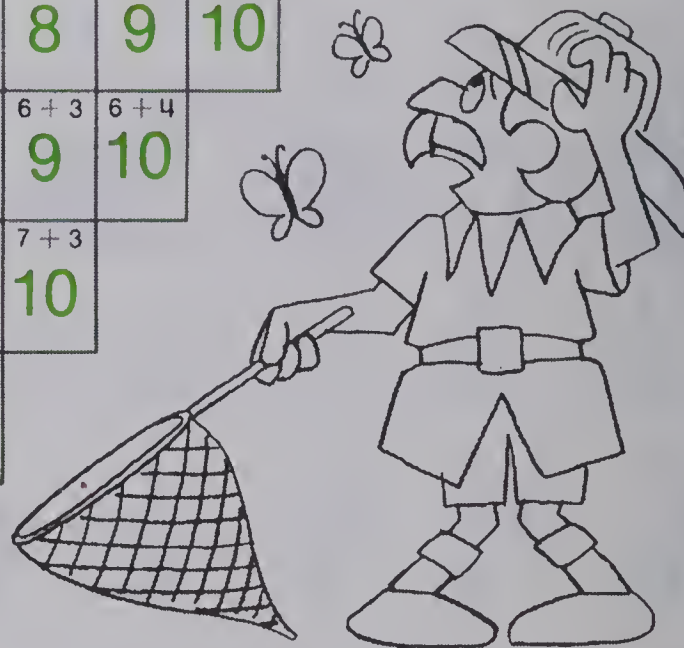
Initial Activity Use a simpler table than that on page 181.

+	0	1	2	3	4	5	6	7	8	9
3	3	4	5							

Guide the child in filling in the table. Repeat this, adding a different number each time, until the child is familiar enough with the system to fill out the table alone.

An Addition Table

+	0	1	2	3	4	5	6	7	8	9
0	0 + 0 0	0 + 1 1	0 + 2 2	0 + 3 3	0 + 4 4	0 + 5 5	0 + 6 6	0 + 7 7	0 + 8 8	0 + 9 9
1	1 + 0 1	1 + 1 2	1 + 2 3	1 + 3 4	1 + 4 5	1 + 5 6	1 + 6 7	1 + 7 8	1 + 8 9	1 + 9 10
2	2 + 0 2	2 + 1 3	2 + 2 4	2 + 3 5	2 + 4 6	2 + 5 7	2 + 6 8	2 + 7 9	2 + 8 10	
3	3 + 0 3	3 + 1 4	3 + 2 5	3 + 3 6	3 + 4 7	3 + 5 8	3 + 6 9	3 + 7 10		
4	4 + 0 4	4 + 1 5	4 + 2 6	4 + 3 7	4 + 4 8	4 + 5 9	4 + 6 10			
5	5 + 0 5	5 + 1 6	5 + 2 7	5 + 3 8	5 + 4 9	5 + 5 10				
6	6 + 0 6	6 + 1 7	6 + 2 8	6 + 3 9	6 + 4 10					
7	7 + 0 7	7 + 1 8	7 + 2 9	7 + 3 10						
8	8 + 0 8	8 + 1 9	8 + 2 10							
9	9 + 0 9	9 + 1 10								



Using the addition table (one hundred eighty-one) 181

Using the Book Explain that this is an addition table on which sums to ten will be written. Point out the numerals 0 to 9 written down on the left side of the table and the numerals 0 to 9 written across the top of the table. Provide the child with two narrow strips of construction paper, one red and one green. Ask the child to lay the red strip under the row that has the numeral 0 on the left. Then have the child lay the green strip on the right of the column with the numeral 5 at the top. Explain that the sum for 0 + 5 is to be written in the box where the strips meet. Have the child trace the sum 5 in this space where the purple butterfly is shown.

In a similar way, guide the child to locate the spaces to write the sums for 2 + 4 (yellow butterfly) and 4 + 3 (red butterfly).

Next, you may direct the child to begin with the place for 0 + 0, trace the given numerals, and complete the first row. Then the child should complete all the rows.

1.

$$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$$
$$\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$$
$$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$$
$$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$$
$$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 7 \\ + 2 \\ \hline 9 \end{array}$$
$$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$$
$$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$$
$$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 0 \\ + 7 \\ \hline 7 \end{array}$$
$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

2.

$$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 4 \\ + 1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 6 \\ + 0 \\ \hline 6 \end{array}$$
$$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$$

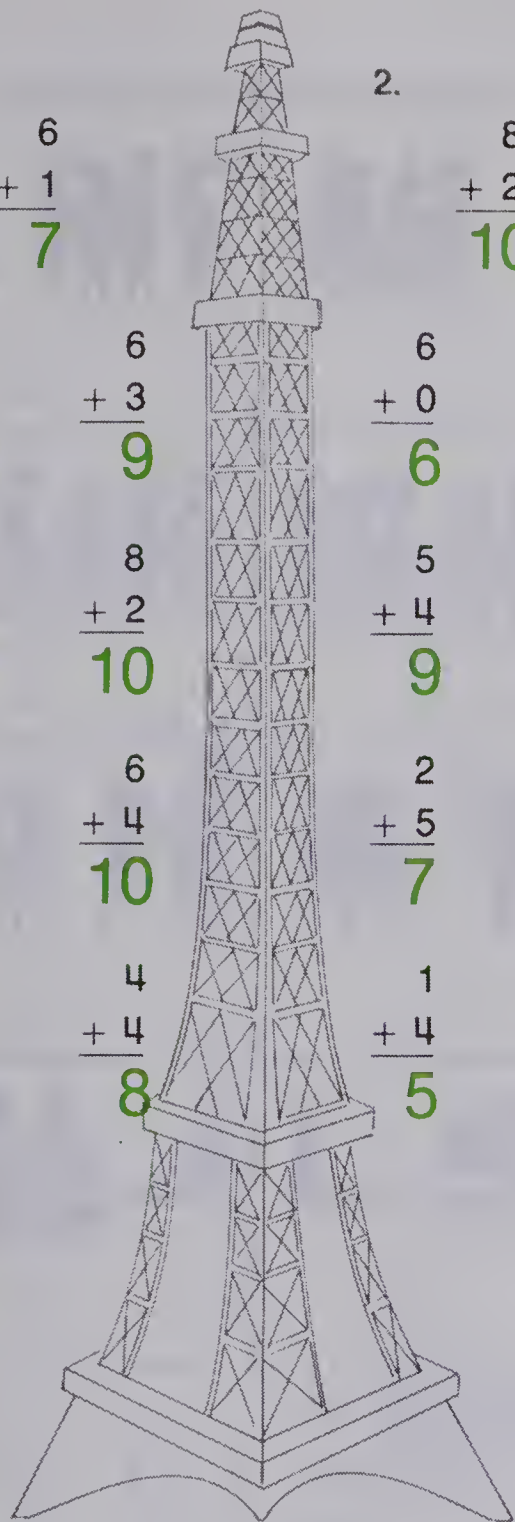
$$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$$
$$\begin{array}{r} 3 \\ + 1 \\ \hline 4 \end{array}$$
$$\begin{array}{r} 0 \\ + 9 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 2 \\ + 5 \\ \hline 7 \end{array}$$
$$\begin{array}{r} 8 \\ + 0 \\ \hline 8 \end{array}$$
$$\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array}$$
$$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$$
$$\begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$$
$$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$$



AT HOME. Choose any 2 rows of exercises to read to the child. Have the child tell you the answers.

ACTIVITIES

1. Have the child play Matching the Sum/Difference as described in the Activity Reservoir. Use sums and differences to 10.
2. Have the child make a different kind of addition table in book form. Take 5 pages and fold them in half and staple. On each page have the child write a different group of addition sentences:

Page 1	Page 2
1 + 0 = 1	2 + 0 = 2
1 + 1 = 2	2 + 1 = 3
1 + 2 = 3	2 + 2 = 4
1 + 3 = 4	2 + 3 = 5
1 + 4 = 5	2 + 4 = 6
1 + 5 = 6	2 + 5 = 7
1 + 6 = 7	2 + 6 = 8
1 + 7 = 8	2 + 7 = 9
1 + 8 = 9	2 + 8 = 10
1 + 9 = 10	

Continue in this way with 3 + 0 on the next page and then 4 + 0 and so on. This book can be extended when the child learns additional basic facts.

3. See Bulletin Board suggestion 3 in the Chapter Overview.
4. Have the child play Basic Fact Wheels as described in the Activity Reservoir. Use facts through sum 10.
5. Assist the child in making an addition table similar to the one on page 181. Have the child paste the table on a piece of cardboard or construction paper. As an alternative, after completing page 182, the child may color it and paste it on cardboard. The addition table is meant to be kept and used for practice.

Using the Book Panels 1-2: Tell the child to add.

At Home After finishing the pupil page, the child may take it home and do the At Home activity printed in blue at the bottom of the page.

OBJECTIVES

To complete subtraction sentences for subtracting from 9

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All

MATERIALS

number line

SUGGESTIONS

Initial Activity Write all the subtraction sentences for subtracting from 9, as $9 - 4 = \underline{\quad}$. Have the child use the number line to find each difference.

ACTIVITIES

1. Have the child use felt objects on the flannel board to show subtracting from 9. Use yarn to make X's. Then have the child write the appropriate subtraction sentence.

2. Have the child write these sentences in the Subtraction Book.
See page 58.

$9 - 0 =$	$9 - 1 =$
$9 - 9 =$	$9 - 8 =$
$9 - 2 =$	$9 - 3 =$
$9 - 7 =$	$9 - 6 =$
$9 - 4 =$	$9 - 5 =$

3. Have the child play Bingo as described in the Activity Reservoir. Use addition and subtraction involving 9.

Subtracting from Nine



$$9 - 4 = \underline{\quad}$$



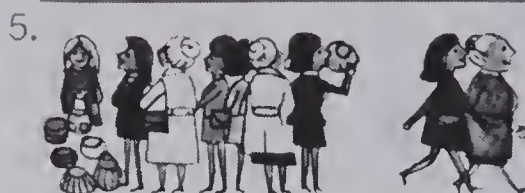
$$9 - 5 = \underline{4}$$



$$9 - 3 = \underline{6}$$



$$9 - 6 = \underline{3}$$



$$9 - 2 = \underline{7}$$



$$9 - 7 = \underline{2}$$



$$9 - 0 = \underline{9}$$



$$9 - 9 = \underline{0}$$

9.

$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 9 \\ - 8 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$
---	---	---	---	---	---



Subtracting from 9 (one hundred eighty-three) 183

Using the Book Panel 1: Say, "9 men in all. 4 leave. How many are staying?" Direct attention to and read, "9 minus 4 equals what?" Have the child trace over the 5. You may then ask the child to draw a line from 4 to the 4 men leaving and from 5 to the 5 men staying.

Panel 2: Have the child tell a story about this picture. Direct attention to $9 - 5 = \underline{\quad}$. You may have the child draw a line from 5 to the 5 men leaving. Then the child can write the number of the other set (4) in the blank and draw a line to the 4 men staying. Tell the child that $9 - 4 = 5$ and $9 - 5 = 4$ are related subtraction sentences. Point out that the first sentence begins with 9, subtracts 4, and gets 5. The second sentence also begins with 9, but subtracts the 5, and gets 4.

Panels 3-8: Tell the child to look at each picture and find the difference. In panel 7, nine girls are talking. Zero means no girls are coming to join them. In panel 8, nine girls are leaving. Zero means there are no girls left.

Panel 9: Tell the child to subtract.

1.	$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ - 5 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 8 \\ \hline 1 \end{array}$
2.	$\begin{array}{r} 5 \\ - 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$	$\begin{array}{r} 9 \\ - 7 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ - 7 \\ \hline 0 \end{array}$
3.	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$	$\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$
4.	$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$		$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ - 9 \\ \hline 0 \end{array}$
5.	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$	$\begin{array}{r} 9 \\ - 8 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$
6.	$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$	$\begin{array}{r} 7 \\ - 0 \\ \hline 7 \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$
7.	$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$			

AT HOME. Choose any 2 rows of exercises to read to the child. Have the child tell you the answers.

Have the child play Bingo as described in the Activity Reservoir. Use vertical subtraction facts to 9.

EXTRA PRACTICE

Have the child subtract.

1.	$\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$	$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 8 \\ \hline 1 \end{array}$	$\begin{array}{r} 7 \\ - 0 \\ \hline 7 \end{array}$
2.	$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$	$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$
3.	$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$
4.	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 9 \\ - 7 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$
5.	$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$
6.	$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$

Using the Book Panels 1-7: Tell the child to subtract.

At Home After finishing the pupil page, the child can take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVES

To complete subtraction sentences for subtracting from 10
To subtract from 10 or less, in vertical form

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All

MATERIALS

10 blocks

SUGGESTIONS

Initial Activity Give the child 10 blocks. Remove different numbers of blocks to develop all the subtraction sentences for subtracting from 10.

ACTIVITIES

1. Have the child use objects to dramatize various subtraction sentences. Assist the child in writing the appropriate number sentence.

2. Have the child write these sentences in the Subtraction Book. See page 58.

$10 - 2 =$	$10 - 3 =$
$10 - 8 =$	$10 - 7 =$
$10 - 4 =$	$10 - 5 =$
$10 - 6 =$	$10 - 9 =$

3. Have the child play Bingo as described in the Activity Reservoir. Use basic facts for 9 and 10.

Subtracting from Ten



$$10 - 1 = \underline{9}$$



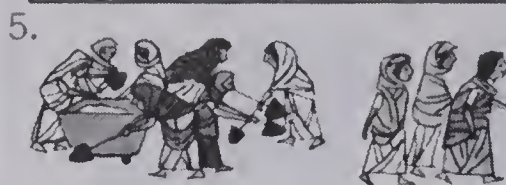
$$10 - 9 = \underline{1}$$



$$10 - 2 = \underline{8}$$



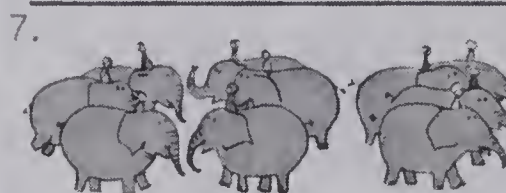
$$10 - 8 = \underline{2}$$



$$10 - 3 = \underline{7}$$



$$10 - 7 = \underline{3}$$



$$10 - 4 = \underline{6}$$



$$10 - 6 = \underline{4}$$

9.

$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$	$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$	$\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$	$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$
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Subtracting from 10 (one hundred eighty-five) 185

Using the Book Panel 1: Say, "10 people in all, 1 is going away. How many are left?" Direct attention to and read, "10 minus 1 equals what?" Have the child trace the difference, 9. You may then ask the child to draw a line from 1 to the 1 person leaving and from 9 to the 9 people staying.

Panel 2: Have the child tell a story about this picture. Direct attention to $10 - 9 = \underline{\quad}$. You may have the child draw a line from 9 to the 9 people leaving. Then the child can write the number (1) of the other set on the blank and draw a line to the 1 person staying. To show that $10 - 9 = 1$ and $10 - 1 = 9$ are related subtraction sentences, point out the first sentence begins with 10, subtracts 1, and gets 9. The second sentence begins with 10, subtracts 9, and gets 1.


Panels 3-8: Have the child look at each picture and find the difference.

Panel 9: Tell the child to find each difference.

1. $\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$ $\begin{array}{r} 9 \\ - 8 \\ \hline 1 \end{array}$ $\begin{array}{r} 8 \\ - 0 \\ \hline 8 \end{array}$ $\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$ $\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$ $\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$


2. $\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$ $\begin{array}{r} 10 \\ - 1 \\ \hline 9 \end{array}$ $\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$ $\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$ $\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$ $\begin{array}{r} 6 \\ - 3 \\ \hline 3 \end{array}$

3. $\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$ $\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$ $\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$ $\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$ $\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$ $\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$

4. $\begin{array}{r} 7 \\ - 1 \\ \hline 6 \end{array}$ $\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$  $\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$ $\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$ $\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$

5. $\begin{array}{r} 9 \\ - 9 \\ \hline 0 \end{array}$ $\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$ $\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$ $\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$ $\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$ $\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$

6. $\begin{array}{r} 10 \\ - 1 \\ \hline 9 \end{array}$ $\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$ $\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$ $\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$ $\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$ $\begin{array}{r} 9 \\ - 9 \\ \hline 0 \end{array}$

7. $\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$ $\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$ $\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$ $\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$ 

AT HOME: After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

1. Have the child play Bingo as described in the Activity Reservoir. Use the vertical form for basic facts for 9 and 10.

EXTRA PRACTICE

Have the child subtract.

1. $\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$ $\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$ $\begin{array}{r} 8 \\ - 5 \\ \hline 3 \end{array}$ $\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$ $\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$

2. $\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$ $\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$ $\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$ $\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$ $\begin{array}{r} 8 \\ - 7 \\ \hline 1 \end{array}$

3. $\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$ $\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$ $\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$ $\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$ $\begin{array}{r} 8 \\ - 1 \\ \hline 7 \end{array}$

4. $\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$ $\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$ $\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$ $\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$ $\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$

5. $\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$ $\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$ $\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$ $\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$ $\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$

6. $\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$ $\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$ $\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$ $\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$ $\begin{array}{r} 9 \\ - 7 \\ \hline 2 \end{array}$

Using the Book Panels 1-7: Tell the child to subtract.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVES

To add and subtract using related addition and subtraction sentences, sum 9
To write sum 9 or less in vertical form

PACING

Level A 187 All (1-4 guided)
Level B 187 All (1-4 guided)
Level C 187 All (1-4 guided)

MATERIALS

18 blocks

SUGGESTIONS

Initial Activity Using blocks show $5 + 4$, then show another group to represent $4 + 5$. Write $5 + 4 = 9$ and $4 + 5 = 9$. Explain that these are related addition sentences because they use the numbers 5, 4, 9. Then demonstrate $9 - 4$ and $9 - 5$. Write $9 - 4 = 5$ and $9 - 5 = 4$. Explain that all four sentences are related because they use the numbers 5, 4, 9. Tell the child four related sentences are called a family.

The 9 Family



$$5 + 4 = \underline{\quad}$$



$$9 - 4 = \underline{5}$$



$$4 + 5 = \underline{9}$$



$$9 - 5 = \underline{4}$$

5.

$$6 + 3 = \underline{9}$$

$$9 - 3 = \underline{6}$$

$$3 + 6 = \underline{9}$$

$$9 - 6 = \underline{3}$$

6.

$$7 + 2 = \underline{9}$$

$$9 - 2 = \underline{7}$$

$$2 + 7 = \underline{9}$$

$$9 - 7 = \underline{2}$$



Related sentences for 9 (one hundred eighty-seven) 187

Using the Book Panel 1: Ask, "How many children are beating the drums? (5) How many are coming? (4) How many children in all? (9)" Read, "5 plus 4 equals what?" Have the child trace the 9.

Panel 2: Ask, "How many children in all? (9) How many are going away? (4) How many are left? (5)" Read, "9 minus 4 equals what?" Have the child write 5.

Panels 3-4: Ask questions similar to those in panels 1 and 2. Point out that panels 1-4 show four related sentences. Use the pictures to show that $4 + 5$ is the same as $5 + 4$ except for order. Also point out that each subtraction sentence begins with 9 and subtracts the number added in the panel before it. The result is the other number that was added.

Panels 5-6: Have the child complete the related sentences in each panel. Encourage the child to use each addition sentence to complete the related subtraction sentence.

The 10 Family



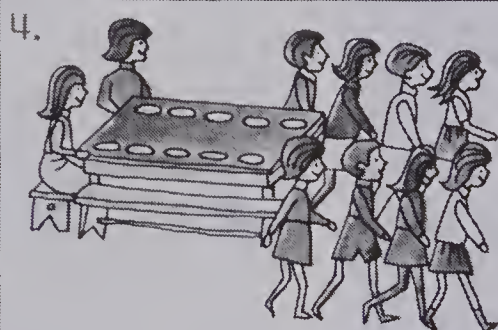
$$8 + 2 = \underline{10}$$



$$10 - 2 = \underline{8}$$



$$2 + 8 = \underline{10}$$



$$10 - 8 = \underline{2}$$

5.

$$7 + 3 = \underline{10}$$

$$10 - 3 = \underline{7}$$

$$3 + 7 = \underline{10}$$

$$10 - 7 = \underline{3}$$

6.

$$6 + 4 = \underline{10}$$

$$10 - 4 = \underline{6}$$

$$4 + 6 = \underline{10}$$

$$10 - 6 = \underline{4}$$



188 (one hundred eighty-eight) Related sentences for 10

OBJECTIVES

To add and subtract using related addition and subtraction sentences, sum 10
To write sums 10 or less in vertical form

PACING

Level A 188 All (1-4 guided)

Level B 188 All (1-4 guided)

Level C 188 All (1-2 guided)

MATERIALS

horizontal addition and subtraction practice cards, sums to 10 (See Basic Fact Practice Cards in the Activity Reservoir.)

SUGGESTIONS

Initial Activity It may be beneficial for the child to review addition and subtraction sentences sum 10 using the horizontal practice cards. Have the child pick up a card. Then scramble the other cards and challenge the child to find the 3 other cards related to the one picked. Elicit that all 4 sentences are related because they have the same 3 numbers in each. Tell the child this is a family.

Using the Book Panel 1: Ask, "How many people are eating? (8) How many more are coming? (2) How many people in all? (10)" Read, "8 plus 2 equals what?" Have the child trace the sum 10.

Panel 2: Ask, "How many people in all? (10) How many are going away? (2) How many are left? (8)" Read, "10 minus 2 equals what?" Have the child write 8.

Panels 3-4: Ask questions similar to those in panels 1 and 2. Point out that panels 1-4 show four related sentences. Use the pictures to show that $8 + 2$ is the same as $2 + 8$ except for order. Also point out that each subtraction sentence begins with 10, subtracts the number added in the panel before it, and gets the other number added.

Panels 5-6: Have the child complete the related sentences in each panel. Encourage the child to use each addition to complete the related subtraction sentence.

ACTIVITIES

1. Have the child play Matching the Sum/Difference as described in the Activity Reservoir. Include addition and subtraction involving 9.

2. Shuffle together all the sentence cards (playing size) for sums 8 and 9 and subtracting from 8 and 9. Deal five cards to each player. The others are placed in a stack face down on the table. Each player in turn draws a card. It may be kept or discarded in another pile. Each player is trying to get a family of four related cards as $1 + 8 = 9$, $8 + 1 = 9$, $9 - 1 = 8$, $9 - 8 = 1$. If no child has a match, reshuffle the discard pile and keep playing.

3. Designate 3 numbers, such as 3, 6, 9 for the child to work with. Challenge the child to use the flannel board to display a family (4 related sentences) using these numbers. Yarn can be used to make X's over objects in subtraction sentences.

4. Prepare the following puzzle. Time the child while doing the rows across. Then have the child do the columns down and try to beat the first time.

4	+4	=	8	-6	=	2	+7	=	9
+2			+2			+6			-6
6	+4		10	-2		8	-5		3
+2			-5			+1			+6
8	-3		5	+4		9	-0		9
-8			+2			+1			-7
0	+7		7	+3		10	-8		2

1.

7

- 1

6

8

+ 1

9

4

+ 4

8

9

- 0

9

9

- 4

5

7

+ 1

8

2.

3

+ 5

8

8

- 2

6

9

- 2

7

1

+ 8

9

9

- 6

3

0

+ 9

9

3.

7

+ 2

9

9

- 5

4

5

+ 4

9

3

+ 6

9

9

- 3

6

9

- 9

0

4.

10

- 3

7

2

+ 8

10

0

+ 9

9

8

- 4

4

10

- 5

5

6

+ 4

10

5.

9

+ 1

10

10

- 4

6

10

- 7

3

4

+ 6

10

9

- 7

2

5

+ 4

9

6.

4

+ 4

8

9

- 6

3

5

+ 5

10

8

+ 0

8

10

- 8

2

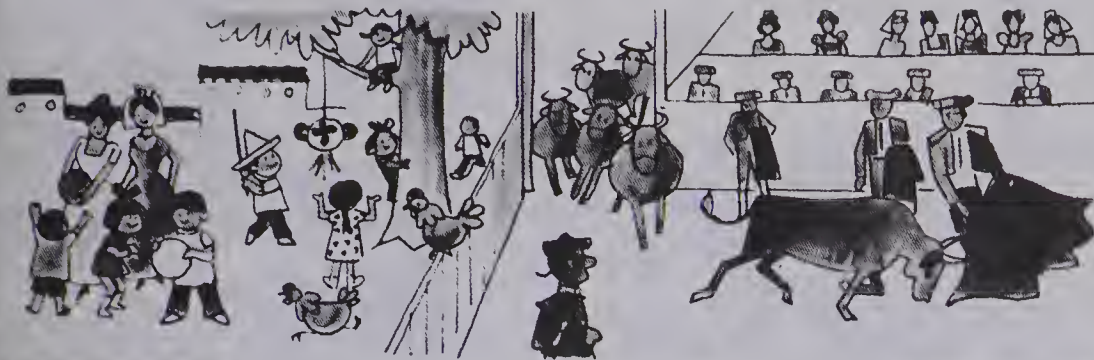
9

- 5

4

Using the Book Panels 1-6: Tell the child to find each sum or difference.

Fun In Mexico



1.	6 men. 3 women. How many in all?	$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$
2.	9 women. 4 go home. How many are left?	$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$
3.	5 boys. 3 girls. How many in all?	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$
4.	9 bulls. 6 ran away. How many are left?	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$

OBJECTIVE

To solve mini-problems, sum 9 or less

PACING

Level A	All (guided)
Level B	All (guided)
Level C	All (1-2 guided)

MATERIALS

9 toys

SUGGESTIONS

Initial Activity Create some mini-problems that the child might dramatize using the toys. For example, have a child hold 6 toys and then have another child give 3 more toys. Assist the child in writing the mini-problem as:

6 toys

3 more toys.

How many in all?

Guide the child in determining whether to add or subtract and in finding the sum, using the vertical form.

ACTIVITIES

1. The child might enjoy using the Jigsaw Puzzle Cards, as described in the Activity Reservoir, to practice addition and subtraction, sums to 9.

2. Have the child play Dot Set Cards, as described in the Activity Reservoir, to practice basic facts 6 to 9.

3. Have the child find scenes in magazines and newspapers that would represent Mexico. Encourage the child to write or state miniproblems involving addition and subtraction (sums to 9) for each scene. Have other children solve the problems.

Using the Book Assist the child in talking about the picture of the fiesta at the top of the page. Then have the child look at the pictures and words on the left. Explain that each picture helps to read the words in the problems.

Panel 1: Read the first problem. Then you may have the child read the problem. Ask, "Do we add or subtract to find how many in all? (add)" Direct attention to the box on the right. Have the child trace over $6 + 3$. Then read, "6 plus 3 is what?" Have the child trace over the 9.

Panel 2: Now you may have the child find the word, women, and the word, home, in the pictures on the left. You may then have the child read the problem. Ask, "Do we add or subtract to find how many are left? (subtract)" Show the child how to write the vertical form in the box on the right. Then have the child subtract.

Panels 3-4: Guide the child to read and show the work in the box on the right for each problem.

OBJECTIVE

To solve mini-problems, sum 10 or less

PACING

- Level A All (1-2 guided)
- Level B All (1-2 guided)
- Level C All (1 guided)

MATERIALS

10 pictures of flowers and flower pots or vases (5 each of 2 colors)


SUGGESTIONS





Initial Activity Display the 10 flower pots. Put flowers over 8 of the pots. Write a mini-problem on the chalkboard. "10 flower pots. 8 flowers. How many more flowers are needed?" Have the child use the display to show 2 more flowers are needed. Assist the child in writing the subtraction in vertical form next to the mini-problem. Follow a similar procedure to show a "How many in all?" problem.

ACTIVITIES

1. Pose addition and subtraction facts involving 10 and have the child demonstrate with manipulatives. You may also have the child tell a story.
2. Have the child use Basic Fact Practice Cards as described in the Activity Reservoir.
3. The child may enjoy cutting pictures from magazines that represent foreign lands and making a collage.
4. See Bulletin Board suggestion 2 in the Chapter Overview.

Picnic In Japan



 dolls	1. 2 big dolls. 8 little dolls. How many in all?	
 kites	2. 10 girls. 4 kites. How many more kites are needed?	$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$
 flowers	3. 7 red flowers. 3 yellow flowers. How many in all?	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$
 bowl	4. 10 boys. 5 bowls. How many more bowls are needed?	$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$

Solving mini-problems (one hundred ninety-one) 191

Using the Book Encourage the child to tell about things happening in the picture of a picnic in Japan. Then have the child look at the pictures and words on the left. Ask the child to tell what each picture shows. Then have the child look at the word and say it.

Panel 1: Read the first problem. Ask, "Do we add or subtract to find how many in all? (add)" Direct the child in tracing the vertical form in the box on the right. Then have the child trace the sum.

Panel 2: You may have the child read this problem, helping with words as needed. Explain how to recognize the word kite under the picture that tells what the word is. Ask, "Do we add or subtract to find how many more are needed? (subtract)" Show the child how to write the vertical form in the box on the right. Have the child subtract.

Panels 3-4: Ask the child to read each problem and show the work in the box on the right.

Lunch Time



plates



cookies



pies



cupcakes

1.
10 plates.
6 break.
How many are left?

$$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$$

2.
8 big cookies.
2 little cookies.
How many in all?

$$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$$

3.
10 pies.
7 were eaten.
How many are left?

$$\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$$

4.
5 yellow cupcakes.
5 green cupcakes.
How many in all?

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

OBJECTIVE

To solve mini-problems

PACING

Level A All (guided)
Level B All (1-2 guided)
Level C All (1 guided)

MATERIALS

10 blocks

SUGGESTIONS

Initial Activity Have the child display a group of 6 blocks then a group of 4 blocks. Ask, "How many in all?" Elicit that this is an addition situation. Have the child write the numbers to be added and then find the sum. Follow a similar procedure for subtraction.

You may wish to discuss the responsibilities of the lunchroom worker. Ask leading questions as "Do they work with food? with people? with money?"

ACTIVITIES

1. Use Jigsaw Puzzle Cards, as described in the Activity Reservoir, to practice basic facts to 10.

2. Have the child cut pictures from magazines of kinds of foods eaten for lunch and make a collage.

3. You may wish to have the lunchroom worker lead a discussion on the responsibilities of his/her job.

4. Have the child practice basic facts with Stop the Magician as described in the Activity Reservoir.

5. You may wish to have the child draw a picture of objects found in the lunchroom.

6. Have the child play Concentration as described in the Activity Reservoir. Use 6 or 8 cards with a match being $5 + 5$ and 10.

Using the Book Discuss the picture at the top. Mention the name of the lunchroom worker in your school. See Career Awareness in the Chapter Overview.

Panel 1: Have the child find the picture of plates in the picture dictionary on the left. Then read the first problem. Ask, "Do we add or subtract to find how many are left? (subtract)" Direct the child in tracing the vertical form in the box on the right. Then have the child trace the difference.

Panel 2: You may have the child read this problem. Explain that to find how many in all means to find the sum. Direct the child in writing the addition in the box on the right.

Panels 3-4: Ask the child to read each problem and show the work in the box on the right.

OBJECTIVE

To solve problems involving money

PACING

Level A All (guided)
Level B All (1-4 guided)
Level C All (1-2 guided)

MATERIALS

10 pennies, 2 nickels, articles with price tags showing 10 cents

SUGGESTIONS

Initial Activity Provide practice in determining the value of sets of coins totaling 10 cents or less. Then give the child a set of coins worth 8 cents. Show the child an object tagged with 10 cents. Ask, "Do you have enough money to buy this? (no) How much more is needed?" Have the child count the 8 cents and elicit that 2 more cents are needed. Assist the child in writing the vertical form.

ACTIVITIES

1. Designate prices for different classroom objects. Using paper coins, have the child show the sets of coins necessary to buy a given object.

2. Place articles or pictures with price tags showing 10 cents or less on the table. Let the child determine which articles are worth the same amount—2 objects worth 2 cents each and 1 object worth 4 cents would be an even trade.

3. Have the child cut articles from a magazine. Then have the child write an amount, less than 50 cents, that the article might be worth. Have the child use paper coins to show the value of the objects. These may be pasted on construction paper and made into a display.

How Much?

1.



$$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$$

How much in all?

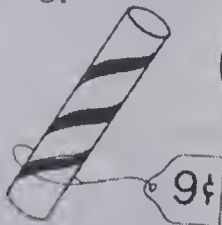
2.



$$\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$$

How much more is needed?

3.



$$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$$

How much more is needed?

4.



$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

How much in all?

5.



$$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$$

How much in all?

6.



$$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$$

How much more is needed?

Solving problems involving money (one hundred ninety-three) 193

Using the Book Panel 1: Have the child point to the picture of the nickel. Ask, "How many cents is a nickel worth? (5) Four pennies is how many cents? (4)" Read, "How much in all?" Ask, "How do we find how much in all? (add)" Guide the child in tracing the vertical form of $5 + 4$ in the box and then tracing the sum. To check, the child can start with 5 for the nickel and then count the pennies.

Panel 2: Ask the child how much the lollipop costs. Then ask how many pennies there are. (3¢) Then say, "If you want to buy a lollipop costing 10¢ and you have 3¢, how much more is needed? (7¢)" The child can check by counting on 4, 5, 6, 7, 8, 9, 10. Guide the child in tracing the vertical form and the difference in the pink box.

Panels 3-6: Follow procedures similar to panels 1 and 2.

Buying and Selling



194 (one hundred ninety-four) Activity: Choosing the coins to buy a given object

Using the Book The activity on this page represents buying and selling. Set up a table with objects from around the classroom on it. Tag the objects with prices. Have one child be the storekeeper and make change if necessary. Have other children be customers. Provide the children with paper coins of actual sizes. Mark the paper coins with 25¢, 10¢, 5¢, and 1¢. Provide each child and the storekeeper with several paper coins of each amount. In some cases, have a child select 2 items and determine how much both will cost.

OBJECTIVE

To buy items displayed using money

PACING

Level A	All (guided)
Level B	All
Level C	All

MATERIALS

pennies, nickels, dimes, and quarters (play money)

SUGGESTIONS

Initial Activity Review the value of a penny, nickel, dime, and quarter. Have the child determine the value of coins by counting.

You might wish to discuss the consumer aspects of this page. Review the meaning of the words sale, bargain, better buy. You might provide elementary situations with sales. Example: 4 pencils at 1 cent each or 4 pencils for a nickel. Which is the better buy?

ACTIVITIES

1. Have the child cut pictures from magazines and write how much the child thinks it is worth. Have the child trade pictures of equal value. Use amounts under 50¢.

2. Have the child play Concentration as described in the Activity Reservoir. A match would be a picture of a penny and a card that says 1¢ etc.

3. Give the child 5 pennies. Offer to sell the child 2 pencils for 3¢ or 1 pencil for 2¢. Assist the child in discovering 2 pencils at 2¢ each would be more than 2 pencils for 3¢.

OBJECTIVE

To review and maintain the following skills:

- To recognize one half of a whole
- To recognize one third of a whole
- To recognize one fourth of a whole
- To add 3 addends in vertical form

PACING

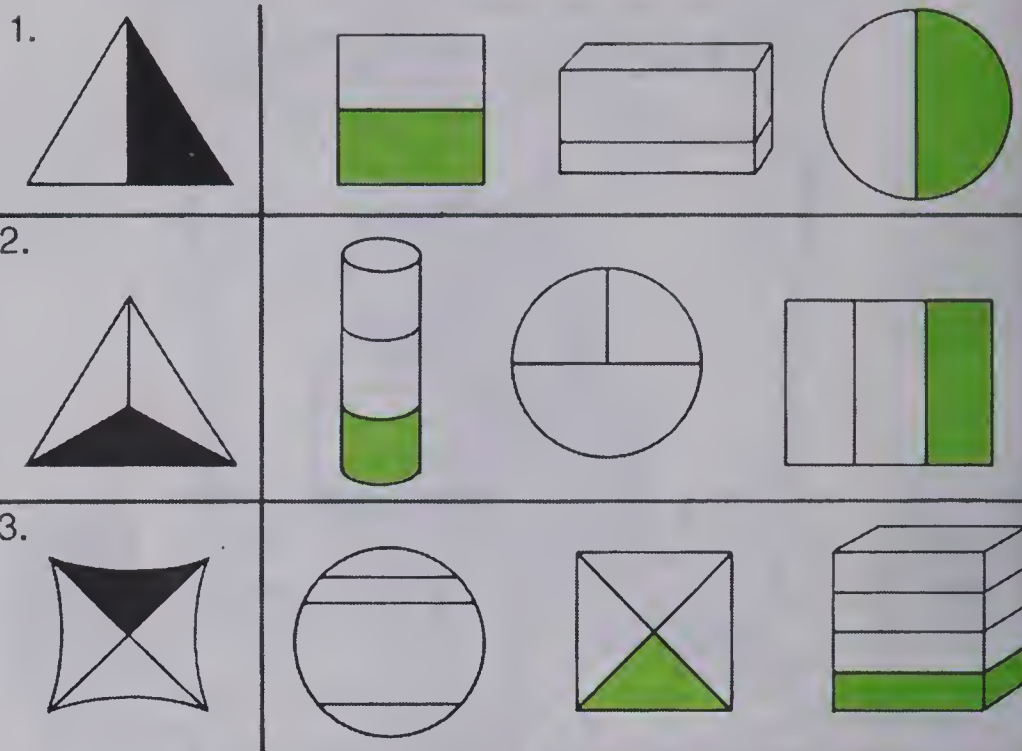
- Level A All (1 and 4 guided)
 Level B All (1 guided)
 Level C All (1 guided)

SUGGESTIONS

If children have unusual difficulty with the exercises on this page, you could provide the appropriate remedial work. The page references following the objectives are keyed to the lessons where the concepts are taught.

ACTIVITIES

1. Display 10 blocks. Challenge the child to think of various ways to group these objects into 3 groups: for example, two groups with 4 blocks and one group with 2 blocks. Assist the child in writing the addition in horizontal and vertical form that fits each grouping and finding the sum.
2. Provide oral practice in adding three addends with sums ten or less.
3. Have the child make various displays showing one half, one third, or one fourth of a whole. Use construction paper.



4.

1	3	5	4	9	3
5	2	5	2	0	1
$\begin{array}{r} 1 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$
10	10	10	9	10	10
7	1	6	2	4	2
1	6	2	5	2	0
$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline \end{array}$
9	9	10	10	8	10

Keeping Fit: Solving fractions; adding 3 addends (one hundred ninety-five) 195

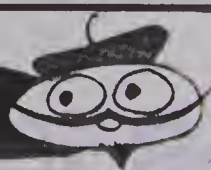
Using the Book Panel 1: Have the child locate the triangle. Ask, "What part of the triangle is colored red? (one half)" Have the child use a red crayon to color one half of any figure in the panel that is separated into halves.

Panel 2: Follow procedures similar to panel 1. Have the child use a green crayon to color one third of any figure that is separated into thirds.

Panel 3: Use the same procedure as panel 1. Have the child use a blue crayon to color one fourth of any figure that is separated into fourths.

Panel 4: After the child has added down to find each sum, ask the child to add up to see if the sum is the same.

THINK!



1.
$$\begin{array}{r} 1 \\ + 6 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ + 3 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 5 \\ + 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 6 \\ + 0 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5 \\ + 3 \\ \hline 10 \end{array}$$

2.
$$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$$

3.
$$\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 9 \\ - 2 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 9 \\ - 9 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 9 \\ - 1 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$$

4. 5 boys.
5 girls.
How many in all?
5. 10 children.
4 go away.
How many are left?

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$$

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A A11
Level B A11
Level C A11

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Have the child take a set of 8, 9, or 10 blocks and separate them into three groups, then vertically write the three addends with the sum. Encourage the child to practice adding up and adding down.
2. Have the child play Queen's Plate as described in the Activity Reservoir. Use exercises that are sums and differences 9 and 10.
3. Have the child play Matching The Sum/Difference as described in the Activity Reservoir.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: Have the child complete each related sentence. [pages 177, 179, 183, 185 AB]

Panel 2: Tell the child to write the sum for each column addition. [page 175 C]

Panels 3-4: Tell the child to read the mini-problems and show the work beneath each problem. [page 192 D]

Panel 5: Tell the child to add. [pages 177, 179 A]

Panel 6: Tell the child to subtract. [pages 183, 185 B]

CHAPTER 10 OVERVIEW

LEVEL 10

Geometric figures and measurement are introduced. Three-dimensional figures (ball, cone, box, can) are studied first, then two-dimensional figures such as circle, triangle, rectangle, and square.

Measurement is introduced through arbitrary units. Standard units of length, capacity, and mass (weight) are taught for both the metric and customary systems. The metric and customary systems are taught separately.

OBJECTIVES

- A To recognize and identify circles, triangles, rectangles, and squares, inside, outside, and on
- B To measure lengths in centimetres
- C To recognize one litre is equal to two half litres
- D To read masses in kilograms
- E To read a thermometer
- F To recognize when two containers have the same capacity
- G To identify the mass of an object in non-standard units
- H To name measuring instruments

VOCABULARY

box 197	shorter 205
cone 197	same length 206
can 197	unit(s) 207
ball 197	centimetre(s) 209
circle 198	litre 212
path 199	half litre 212
straight path 199	heavier 213
triangle 201	lighter 213
corners 201	balance scale 214
sides 201	kilogram(s) 214
rectangle 202	mass 214
square corner 202	weigh 214
square 203	thermometer 215
inside 204	degrees 215
outside 204	temperature 215
on 204	
longer 205	

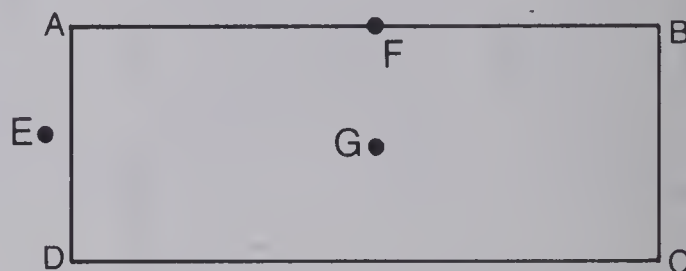
BACKGROUND

1. The three-dimensional objects introduced in this chapter are the sphere, rectangular prism, cylinder, and cone. The common names for these solids are ball, box, can, cone, respectively. These common objects that have these shapes do not have the true mathematical properties of the geometric figure. It is important that the child learn a name for the common solids encountered in everyday life.

2. A line segment is a straight path from one dot to another. The sides of triangles, rectangles, and squares are line segments. At this level, the children call line segments straight paths.

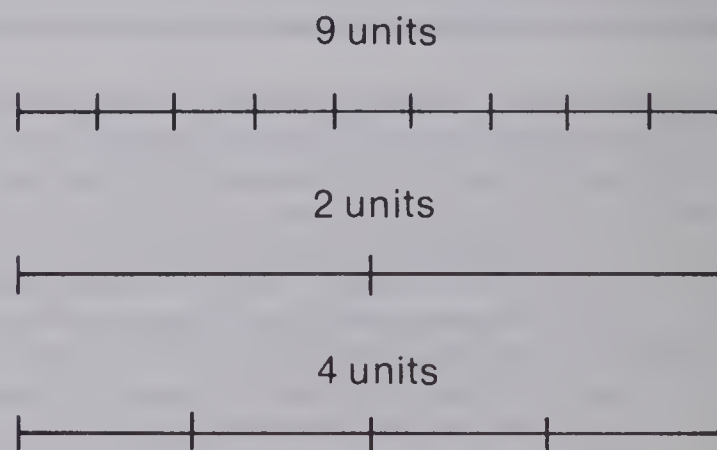
3. Squares are rectangles because they have 4 sides and 4 square corners. We will learn later that if the 4 sides of a rectangle are all the same length, they are also called squares.

4. Triangles, rectangles, squares, and circles are plane figures i.e., two dimensional. These figures are simple closed curves. This understanding is important when locating points outside, on, and inside the figure.



Point E is outside the rectangle, F is on the figure, and G is inside the figure.

5. To measure length we use a line segment. One can select an arbitrary line segment as a unit of measure. Then if a different unit is used, the number associated with the measurement is different.



To overcome this, standard units of measure are created. In this grade, the centimetre is a standard unit.

6. We introduce capacity and mass by using non-standard units. The number of units in each case is the measure.

MATERIALS

block, ball, can, cone (party hat), wire circle, triangle, square, rectangle
water glass
yarn
flannel board, felt furniture
triangular prism
small box, all rectangular faces
file card
sticks and unsharpened pencils, various lengths
containers (litre, 2 half litres)
colored water, fine sand
paper strips (1 to 6 cm long)
scale
objects to weigh
1, 2, 3, 4, 5 kg masses
balance scale

CAREER AWARENESS

Food Scientists [217]

Today almost all food is processed by food companies. The food scientist is a key worker who studies the elements in food and the processing, preserving, packaging, and storing of food. Some scientists work in research and development, other in quality-assurance laboratories. Food scientists also work for state and federal agencies that are responsible for the enforcement of pure food laws.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that food scientists are directly involved with research concerning nutrition and proper food preservation. If food were not properly processed for storage, many people would become ill from bacteria contained in food.

Photo description: These scientists are working in a quality-assurance laboratory. They are investigating the nature of food and will apply this knowledge to processing, preserving, packaging, storing, etc.

BULLETIN BOARD

1. It might be interesting for children to create separate displays, one for the metric system and one for the customary system.

For the metric system display a picture of a balance scale, a litre bottle, and a centimetre ruler. The pictures should be large enough to be easily seen. Hang a plastic bag below each picture. Have the children cut out and paste pictures of articles on cards. The pictures should include items such as oranges, tomatoes, liquids, ribbon, chain, bananas, pencils etc. The child shows which type of measuring instrument may be used to measure the object by placing the picture in the bag below the picture of the instrument. Some discussion may arise if two children work together since one may think of weighing, for example a chain, while the other may think of finding its length.

For the customary system follow the same procedure as above. Use pictures of a regular scale, a litre container, and a centimetre ruler.

2. Help the children make a mural for the bulletin board. Each child's contribution must incorporate one or more geometric figure. (A triangular-shaped hat on a woman for example.) Each child can choose a different medium, but it might be well to discourage the use of paint for this project. After the mural is finished, many discussions can grow out of examining it. Children can decide which shapes are big circles or which are small triangles. Graphs can be made to record the breakdown of information gleaned from the mural.

3. Have the children cut out pictures of objects similar to those on pages 205 and 206 and paste each one on a piece of paper. Display these pictures in any manner on the bulletin board. (Be sure to include several pictures of objects that are the same length.) Challenge a child to select two pictures that show objects that are the same length, and verify the selection by using a piece of string to measure each object. You might use this bulletin board to review the concepts of longer than and shorter than.

OBJECTIVE

To identify spheres, boxes, cylinders, and cones

PACING

Level A All (1 guided)

Level B All (1 guided)

Level C All (1 guided)

VOCABULARY

box, cone, can, ball

MATERIALS

blocks, baseball, can, party hat in shape of cone, ice cream cone

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Display items listed under Activity Materials. Have the child identify each item as a ball, a block, a can, or cone. Show the ball, moving your hands over it. Have the child tell how it looks. Ask if it has any corners or edges. By similar questioning, help the child describe each object.

ACTIVITIES

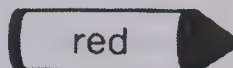
1. Have the child name objects in the classroom that have the shape of a ball, box, cone, and can.

2. Have the child cut pictures, with shapes similar to those pictured, from magazines.

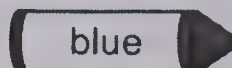
3. Write the words ball, can, box, cone each on a card and paste on the wall. Provide the child with manipulatives or pictures similar to those on page 197. Have the child sort the objects into categories.

The World Around Us

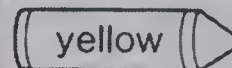
1.



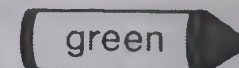
2.



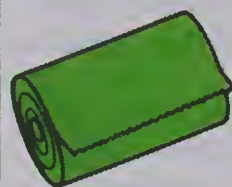
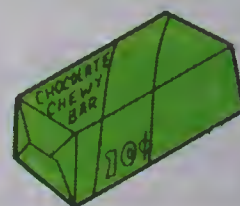
3.



4.



5.



Concepts of spheres, cylinders, cones, and cubes (one hundred ninety-seven) 197

Using the Book Panel 1: Have the child identify the objects across the top of the page: a ball, a can, a cone, and a box.

Panels 2-5: For each column, have the child color every object that has a shape similar to the one shown above that column. Have the child use the color indicated by the crayon at the top of the column. Remind the child that more than one picture may be colored.

Circle

2.



A collection of various geometric shapes on a light gray background. There are several circles and ovals of different sizes. Some of these shapes have a double outline, with the inner outline in green and the outer one in black. A red crayon is positioned at the top left, pointing towards a large circle. A square and a triangle are also present. The shapes are scattered across the page, with some having green outlines and others having black outlines.

198 (one hundred ninety-eight) Recognizing circles

OBJECTIVE

To identify circles

PACING

Level A All (1 guided)

Level B **All (1 guided)**

Level C **All (1 guided)**

VOCABULARY

circle

MATERIALS

water glass

SUGGESTIONS

Initial Activity Trace your finger around the open end of a glass and then holding this end to a piece of paper, draw a picture of a circle. Explain that a circle has no corners and no sides.

ACTIVITIES

1. The child may begin making a booklet entitled, "My Book of Shapes." Duplicated on the top part of a sheet of paper, show a picture of a circle and the word, circle. Have the child paste pictures of objects with a circle shape that have been cut from a magazine.

2. Display several objects whose ends or parts are circles. Have the child locate the circles.

3. Give the child a round object (paper cup, tin can, paint jar, etc.). Have the child use the object to trace around the edge to make circles. The child can create a design of circles on paper.

Using the Book Panel 1: Have the child point to the circle below the picture of the log. Then have the child trace over the part of the log that has the shape of a circle.

Panels 2-3: Have the child identify the objects and follow the same procedure as for panel 1. You might have the child trace around a plate that has been placed upside down on the desk. Ask, "Does a circle have any corners? (no)"

Panel 4: Have the child trace over each picture of a circle using a red crayon. You may wish to call attention to the non-circular curves and explain why they are not circles.

OBJECTIVE

To identify straight paths

PACING

Level A All (1-2 guided)

Level B All (1-2 guided)

Level C All (1-2 guided)

VOCABULARY

straight path

MATERIALS

2 felt houses, yarn, flannel board

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Have the child use yarn to show different paths on the flannel board. Holding the yarn taut between 2 houses, explain that there is only one straight path between the 2 houses.

ACTIVITIES

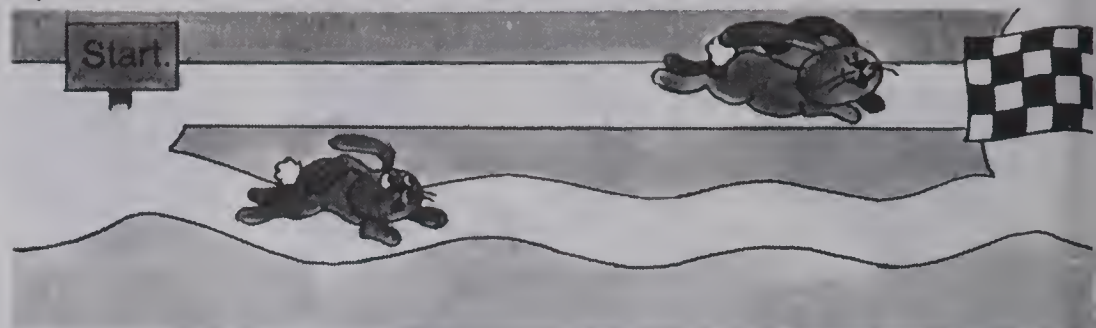
1. Let one child walk a straight path between 2 points; another walk a curved path between the points. Elicit that if both were walking at the same speed, the straight path would take less time.

2. One child draws a straight path between two points with chalk. Another child tries to draw a different straight path between the points. Elicit that there is only one.

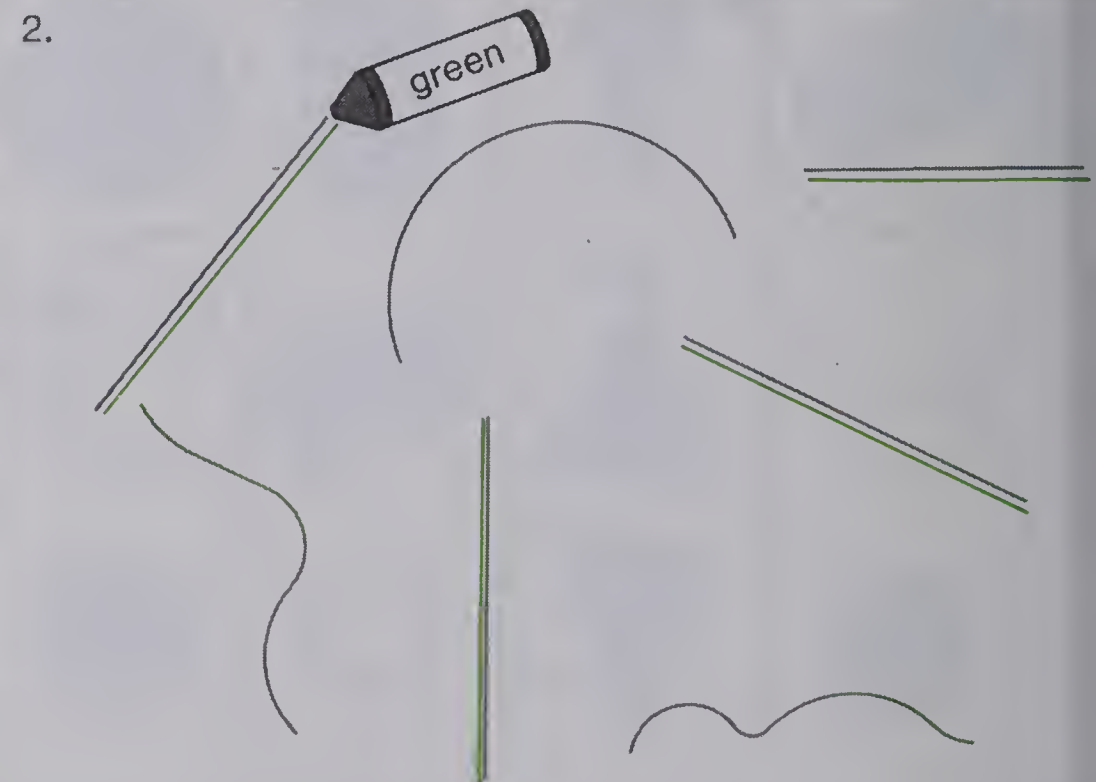
3. On a floor plan have a child draw a straight path between 2 points. Stress that this is the only straight path between them.

Straight Paths

1.



2.



Concept of straight path (one hundred ninety-nine) 199

Using the Book Help the child to describe the action shown in the upper part of panel 1. (Two rabbits are hopping a race.) Have the child point to the starting point and the finish flag and trace the straight path with a finger. Then have the child trace the other path. Ask, "Which path is straight? (the first one) Which path is shorter? (the straight path)" In the lower part of panel 1, have the child color the straight path.

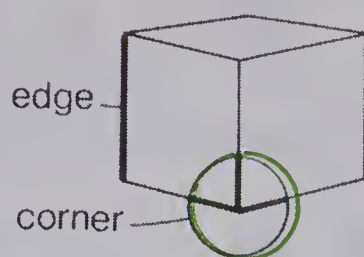
Panel 2: Have the child trace over each straight path with a green crayon.

Faces, Edges, and Corners

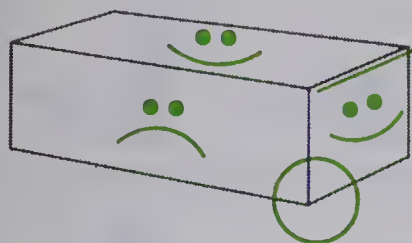
1.



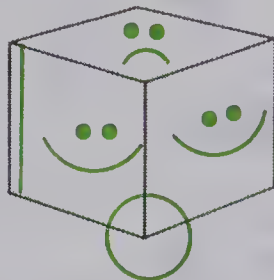
2.



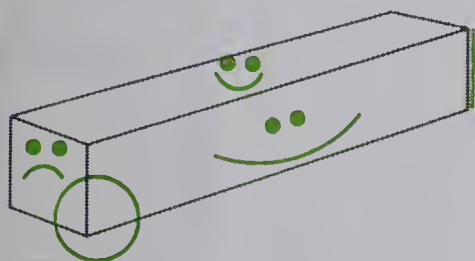
3.



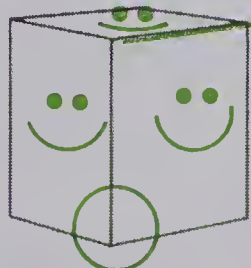
4.



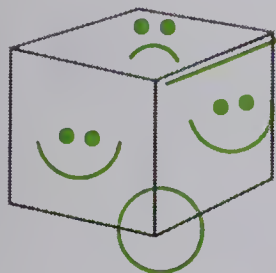
5.



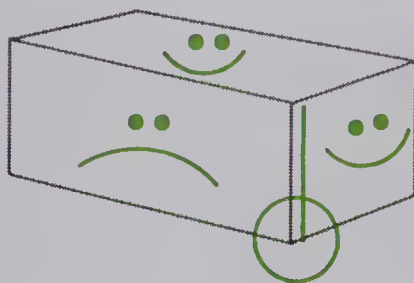
6.



7.



8.



200 (two hundred)

OBJECTIVE

To identify faces, edges and corners of geometric solids

PACING

Level A All (guided)
Level B All (guided)
Level C All (guided)

VOCABULARY

face, edge, corner

MATERIALS

boxes, solid shapes with flat sides

SUGGESTIONS

Initial Activity Put a 'face' on each face of a solid. Make some happy and some sad. Talk about faces of a box. Each child can draw a face on a box (work in groups). Use colored chalk to color one edge of a solid.

Discuss edge. Have each child use a finger to trace along an edge. Point out that a corner is sharp—like a point. Discuss corner. Have a child use a finger to point out a corner of a solid.

ACTIVITIES

Have the child find solids like the one(s) you have in class. Tell the child to draw a 'face' on each face. The child can put masking tape on an edge and a round sticker on a corner.

Using the Book Panel 1: Have the child put a finger on each face. Ask "How many faces can you see?"

Panel 2: Have the child put a finger on an edge, and then run the finger along several edges. Then ask the child to put a finger on a corner. Remind the student that a corner is pointed. Tell the student to put a circle around a corner.

Panels 3-8: Have the child draw a mouth and eyes on each face shown on the figures. Then have the child trace over an edge of each shape, using a crayon. Have the child draw a ring around a corner. (For extra practice you may ask the child to trace each edge and put a ring around each corner.)

OBJECTIVE

To identify triangles

PACING

Level A All (1-4 guided)
Level B All (1-4 guided)
Level C All (1-4 guided)

VOCABULARY

triangle, corners, sides

MATERIALS

wire triangle, triangular prism

SUGGESTIONS

Initial Activities 1. Show the triangular prism shape and have the child trace around one end. Ask how many edges and how many corners were touched. (3) Hold one end to paper and trace the shape. Explain that this is a picture of a triangle.

2. Show a wire model of a triangle. Turn it in different ways so the base is not always parallel to the floor. Ask how many sides and how many corners it has. (3)

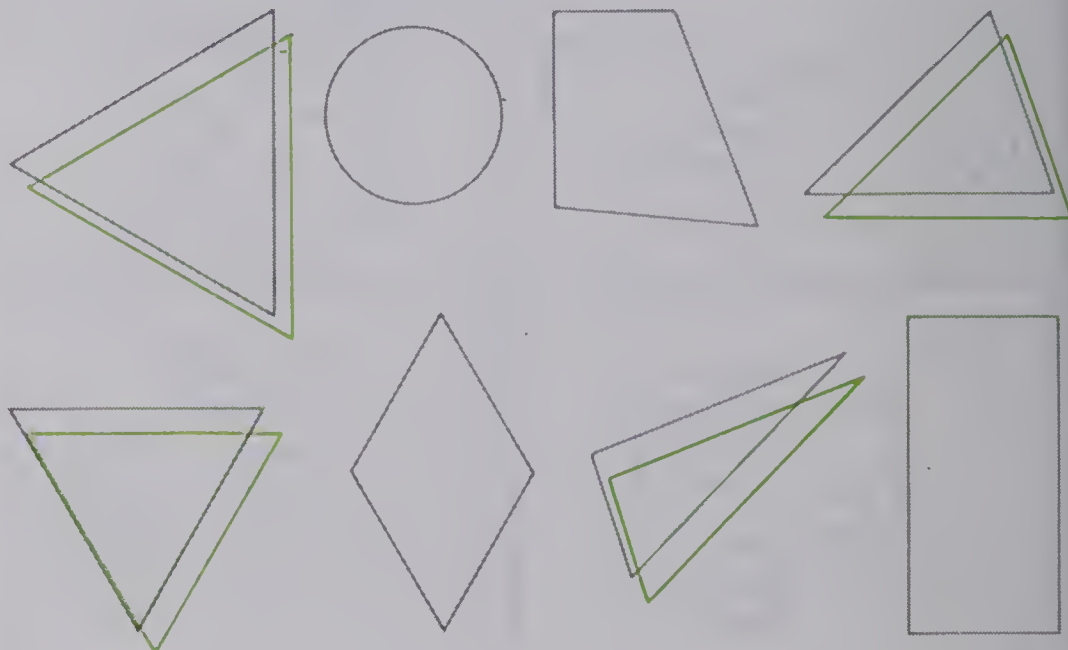
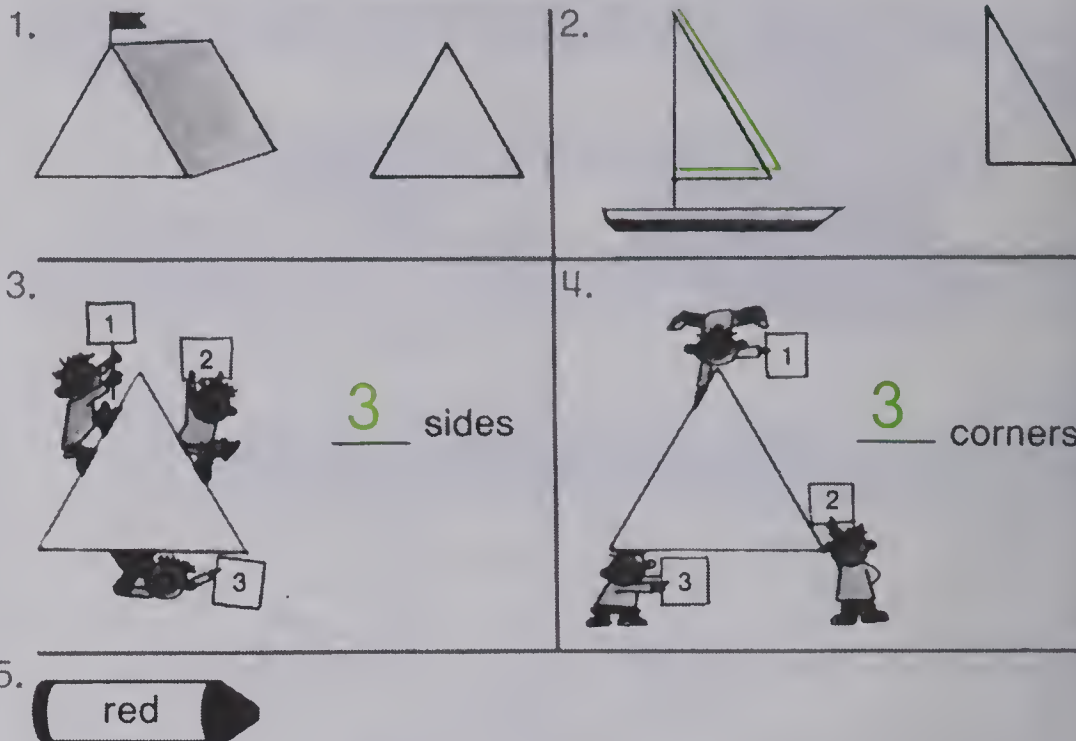
ACTIVITIES

1. Have the child cut pictures from magazines that have the shape of a triangle. The child can add the pictures to the book of shapes, started on page 198.

2. Using popsicle sticks, help the child make several triangles gluing the sticks together. These might be displayed around the room.

3. Have the child select rods or sticks to form a triangle. Arrange it so that in some cases the two smaller sides are shorter than the longest side. In these cases, elicit that no triangle can be made.

Triangle



Recognizing triangles (two hundred one) 201

Using the Book Panel 1: Tell the child that the figure on the right is a triangle and have the child point to it. Have the child use a red crayon to trace over the part of the tent that is a triangle.

Panel 2: Help the child identify the sailboat. Have the child trace over the part that is a triangle with a blue crayon.

Panel 3: Ask, "How many sides does a triangle have? (3)" Have the child write 3 in the space.

Panel 4: Tell the child we call the point (place) where the two sides meet a corner. Ask, "How many corners does a triangle have? (3)" Have the child write the answer in the space.

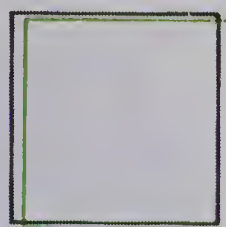
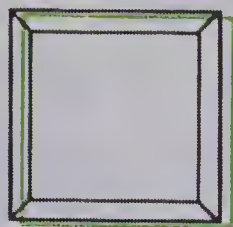
Panel 5: Have the child trace over each triangle with a red crayon.

Rectangle

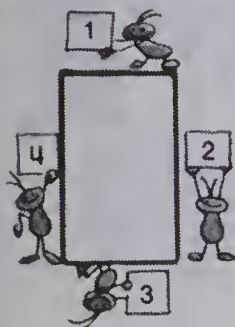
1.



2.

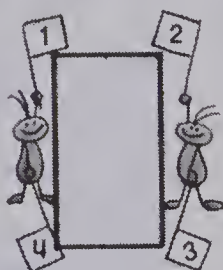


3.



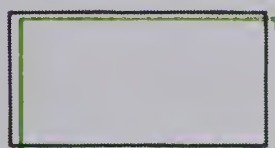
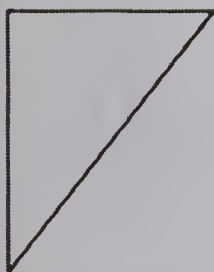
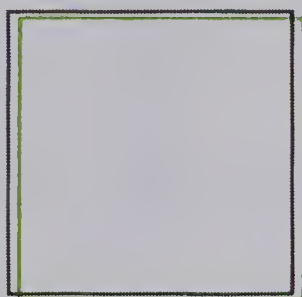
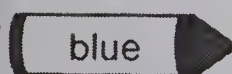
4 sides

4.



4 square corners

5.



202 (two hundred two) Recognizing rectangles

OBJECTIVES

To identify rectangles

To know that a rectangle has four sides and four square corners

PACING

Level A All (1-4 guided)

Level B All (1-4 guided)

Level C All (1-4 guided)

VOCABULARY

rectangle, square corner

MATERIALS

a small box with no square faces, file card

BACKGROUND

See Item 3 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Show a box and have the child trace around the edges of one side. Ask how many edges and how many corners. (4) Hold the box to paper and draw a picture of the edges. Explain that this is a rectangle. Fit the corner of a file card in each corner of the rectangle to show that all the corners are alike.

ACTIVITIES

1. Have the child cut pictures from magazines that have rectangular shapes and include them in the Book of Shapes, started on page 198.

2. Using popsicle sticks, have the child make a rectangle. One stick may be broken in half to make the shorter sides. Have the child glue the ends together.

3. Have the child make a triangle and compare the corners of the rectangle and the triangle.

Using the Book Note that some of the rectangles here are also squares. Squares are introduced on page 203.

Panel 1: Help the child to identify the figures shown (a piece of lined paper and a rectangle). Have the child trace around the edge of the picture of the lined paper. Ask, "What figure did you draw? (a rectangle)"

Panel 2: Have the child trace over the rectangles shown using a different color crayon for each rectangle. The child may color either the inside or the outside edge of the picture frame, or both. This is correct.

Panel 3: Have the child count and record the number of sides of the rectangle.

Panel 4: Have the child count and record the number of square corners of a rectangle. Help the child to understand square corner by fitting the corner of a file card into the corner.

Panel 5: Have the child trace over each picture of a rectangle.

OBJECTIVES

To identify squares

To know that a square has four sides that are the same length and four square corners

PACING

Level A All (1-2 guided)

Level B All (1-2 guided)

Level C All (1-2 guided)

VOCABULARY

square

MATERIALS

wire circles, triangles, squares, rectangles that are not squares

SUGGESTIONS

Initial Activity Display the various geometric figures. Have the child remove any figure that is not a rectangle. Discuss how the figures left are alike. Develop the idea that all these figures have 4 sides and 4 square corners. Ask the difference between the squares and the rectangles. Point out that squares have all the sides the same length.

ACTIVITIES

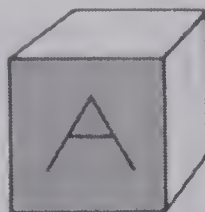
1. Have the child include square shapes in the Book of Shapes, started on page 198.

2. Have the child use a block to trace square shapes on a piece of paper. Then the child can color the collage of squares.

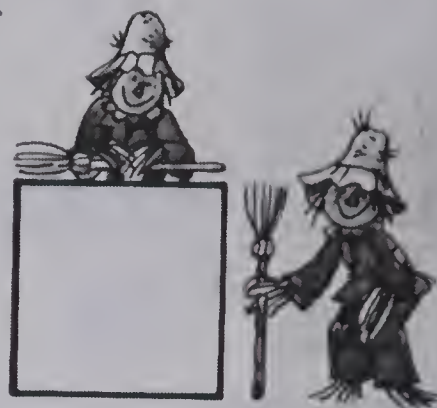
3. See Bulletin Board suggestion 2 in the Chapter Overview.

Square

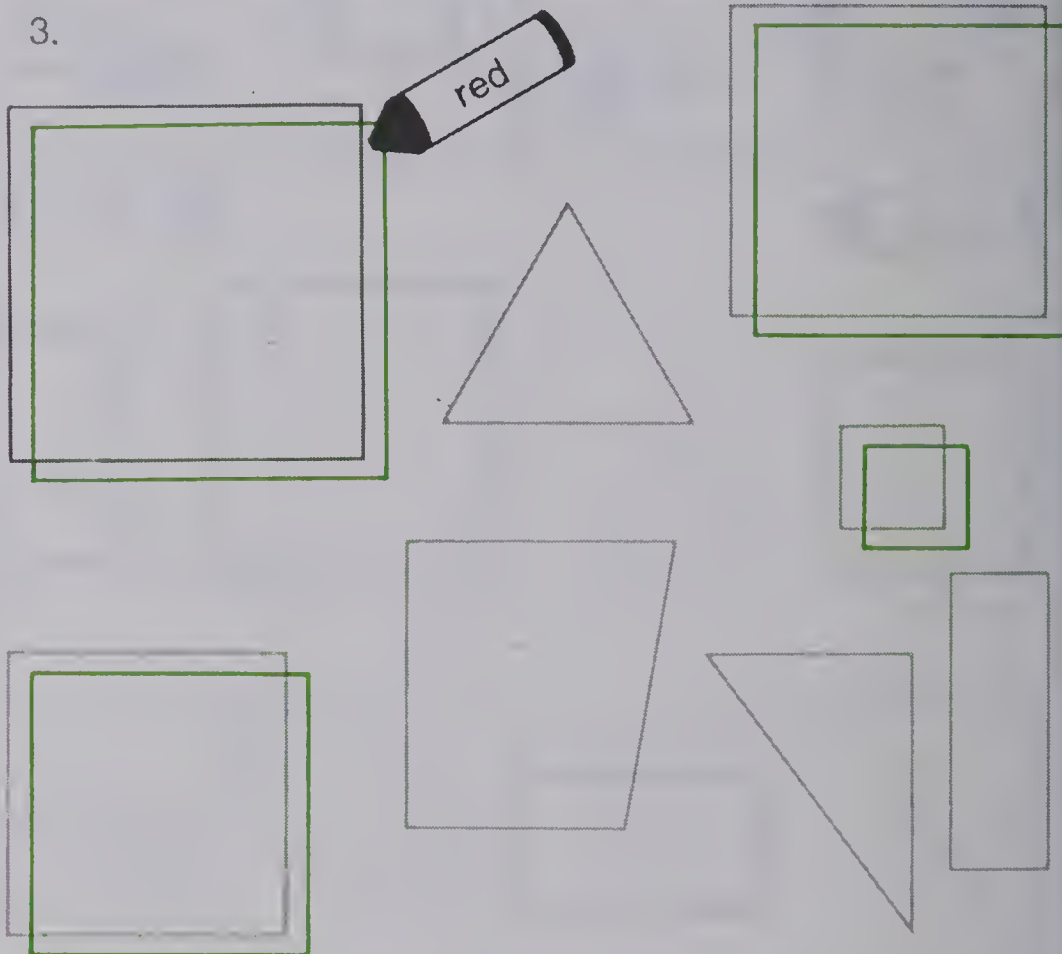
1.



2.



3.



Recognizing squares (two hundred three) 203

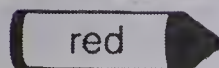
Using the Book Panel 1: Have the child trace over the blue square. Ask, "Do any parts of the block look like a square? (yes)" Have the child trace over the square (the one with the A).

Panel 2: The picture shows that all sides of the square are the same length. Ask, "Does a square have 4 square corners? (yes)" You may have the child check this with the corner of a file card. Explain that a figure with 4 sides of the same length and 4 square corners is a square.

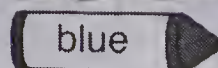
Panel 3: Have the child use a red crayon to trace over each picture of a square. Have the child tell why some pictures are not traced.

Inside, Outside, On

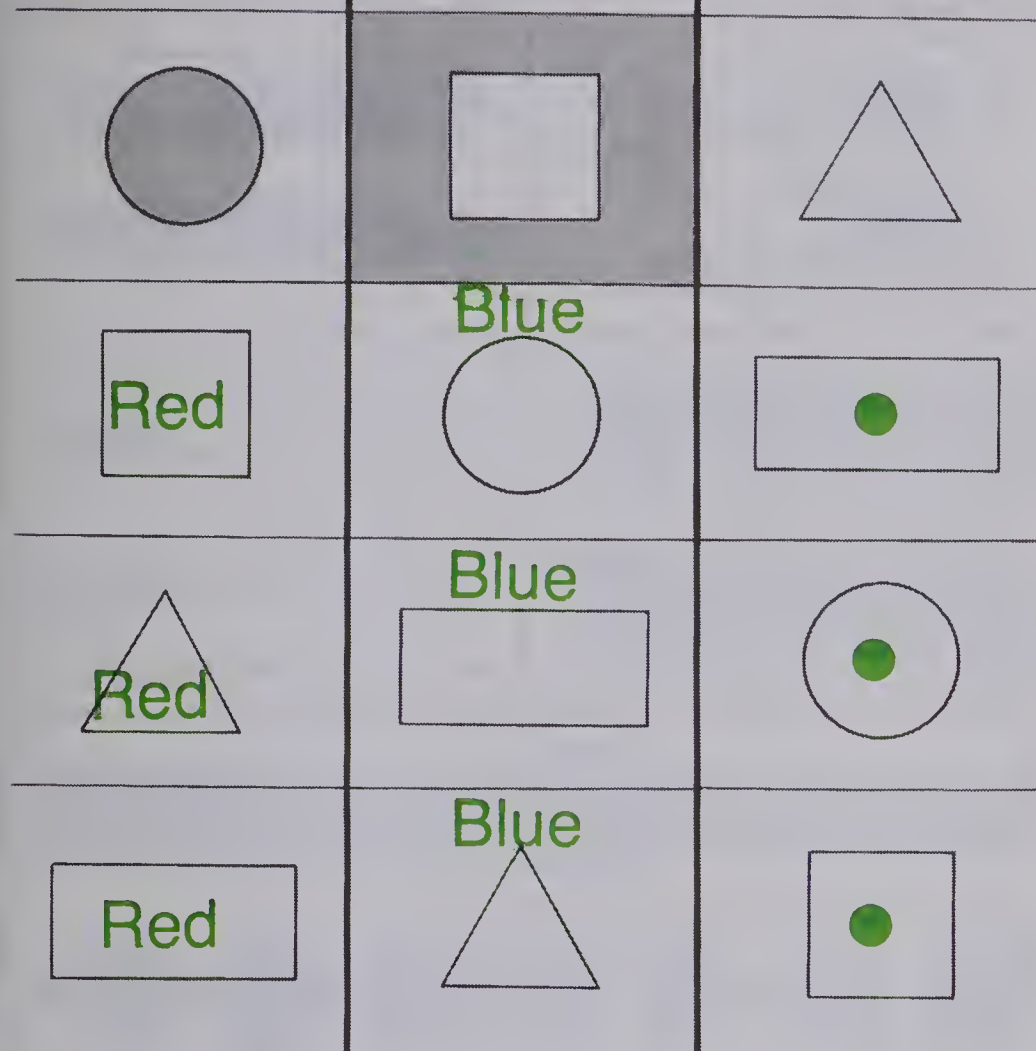
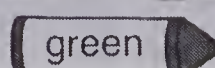
1.



2.



3.



OBJECTIVE

To identify points inside, outside, and on a figure

PACING

Level A All (guided)
Level B All (guided)
Level C All (guided)

VOCABULARY

inside, outside, on

MATERIALS

blocks, wire circles, triangles

BACKGROUND

See Item 4 in the Chapter Overview Background.

SUGGESTIONS

Initial Activity Show a wire circle with a block inside. Ask the child where the block is. Elicit the word inside. Repeat using a wire triangle.

In the same manner, develop the words and concepts of outside and on.

ACTIVITIES

Draw a closed figure on the floor. Have the child stand inside, outside, or on the figure. The other children are to say where the first child is located.

Using the Book Panel 1: Elicit that Flub Blub is inside the car. Have the child point to the figure under the red crayon. Ask the child, "What part of the circle is shaded?" Elicit that the inside of the circle is shaded. Have the child use a red crayon to color inside the circle (over the shading). Direct the child to color the inside of each figure in panel 1 using the red crayon.

Panel 2: Follow procedures similar to panel 1. Direct the child to use a blue crayon to color outside each figure in panel 2.

Panel 3: Follow procedures similar to panel 1. Direct the child to use a green crayon to draw a dot on each figure in panel 3.

OBJECTIVES

To determine the longer of two objects
To determine the shorter of two objects

PACING

- Level A All (1-2 guided)
- Level B All (1-2 guided)
- Level C All (1 guided)

VOCABULARY

longer, shorter

MATERIALS

2 sticks of different lengths and different colors

SUGGESTIONS

- Initial Activities
1. Place two sticks side by side. Ask, "Which is longer?" Have the child answer, "The blue stick is longer than the red stick."
 2. Repeat the activity above asking, "Which is shorter?" Elicit that when one object is longer, the other is shorter.

ACTIVITIES

1. Have the child select several pairs of straws and find the longer, then the shorter. Help the child to line up the ends of the straws.
2. Have the child draw an object on a piece of paper. Have children trade papers. Then have the child draw an object that is longer. Repeat for "shorter."
3. Give the child 3 objects. Have the child choose the longest and the shortest.

Longer, Shorter

1.

Green
Red

2.

Red
Green

3.

Green
Red

4.

Green
Red

5.

Green
Red

6.

Red
Green

7.

Red
Green

Comparing lengths: longer than, shorter than (two hundred five) 205

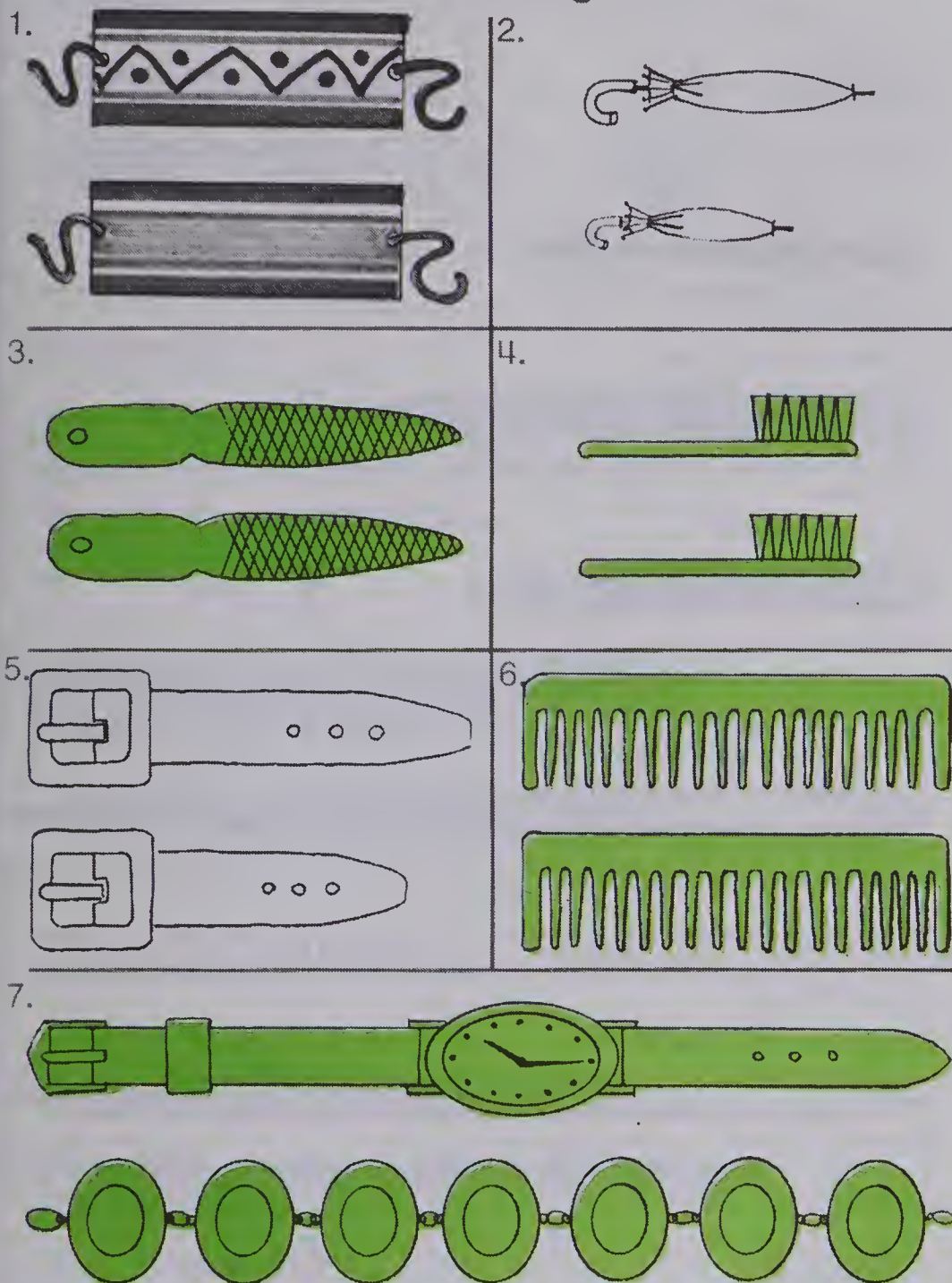
Using the Book Help the child identify the objects shown in each panel. (pencils, boards, candy sticks, nails, crayons, baseball bats, balloons)

Panel 1: Ask the child which pencil is colored. (the longer, the one on the bottom) Ask, "Is the red pencil longer? (yes)"

Panels 2-7: Have the child use a red crayon to color the longer of the two objects shown in each panel.

After completing the page, have the child return to panel 1. Have the child use a green crayon to color the shorter of the two objects in each panel. Ask questions to get responses such as "The green pencil is shorter than the red pencil. The red nail is longer than the green nail."

Same Length



206 (two hundred six) Comparing lengths, the same length

Using the Book Panel 1: Tell the child that both headbands are colored. Ask, "Is the top headband longer than the bottom headband? (no) Is the top one shorter than the bottom one? (no)" Elicit that they are both the same length.

Panel 2: Help the child to identify the umbrellas. Ask, "Are both umbrellas the same length? (no) That's why we won't color them."

Panels 3-7: Have the child color both objects in a panel if they are the same length. Ask the child for the reasons why some are colored and some are not.

OBJECTIVE

To identify objects that have the same length

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All (1 guided)

VOCABULARY

same length

MATERIALS

pencils of different lengths, the same color; pencils of the same length, the same color

SUGGESTIONS

Initial Activity Display two pencils of the same length. Ask, "Which is longer? Which is shorter?" Tell the child the pencils are the same length. Stress that the pencils are the same length because neither is longer nor shorter than the other.

ACTIVITIES

1. See Bulletin Board suggestion 3 in the Chapter Overview.

2. Have the child compare several pairs of objects to tell which is longer, which is shorter, and which are the same length.

3. Give the child several objects of different lengths and some the same length. After selecting one, the child is to locate one that is the same length.

4. Have the child compare the lengths of two objects on opposite sides of the room by measuring one with a string and transferring the length. (Make sure the object is the same length.) You may have the child do this for 3 objects.

OBJECTIVE

To find lengths using arbitrary units

PACING

- Level A 207 All (guided)
208 All
Level B 207 All (guided)
208 All
Level C 207 All (guided)
208 All

VOCABULARY

unit(s)

MATERIALS

unsharpened pencil, objects to measure

BACKGROUND

See Item 5 of the Chapter Overview Background.

SUGGESTIONS

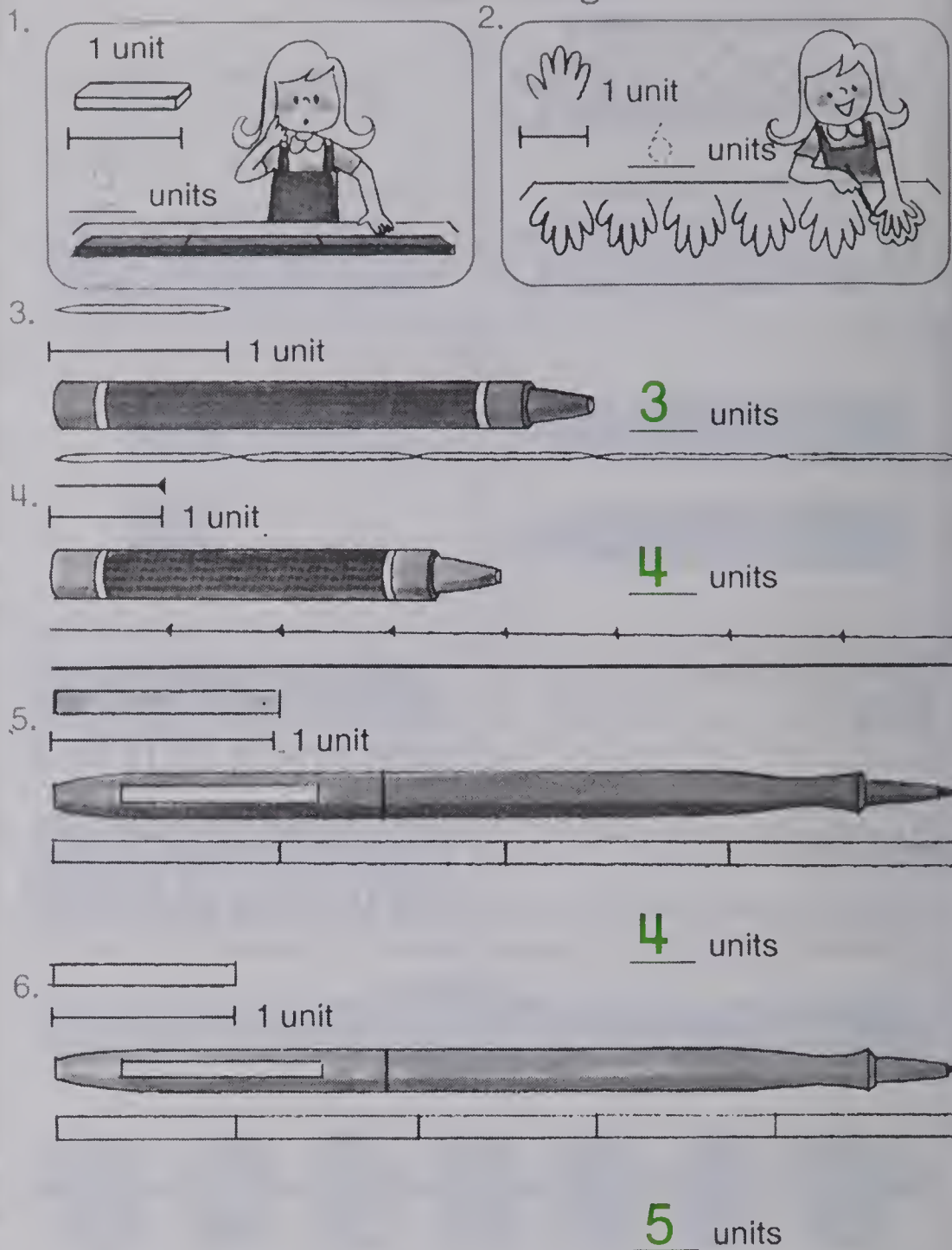
Initial Activities 1. Select two objects on opposite sides of the room. For example, choose an edge of a chair and the side of a box. Ask, "How can we find which is longer?" Guide the child to these conclusions:

- (a) The objects cannot be put side by side.
- (b) A smaller object may be placed end-to-end along each object.

Have the child place a pencil end-to-end along each object and tell how many "pencils long" each object is and which object is longer. When the child has determined the longer object, explain that the pencil was used to measure each object, and the length of the pencil was the unit used in measuring each one.

2. Have the child choose a smaller unit (perhaps a crayon) and use it to measure objects. Each time have the child record the lengths and then discuss the results.

Measuring



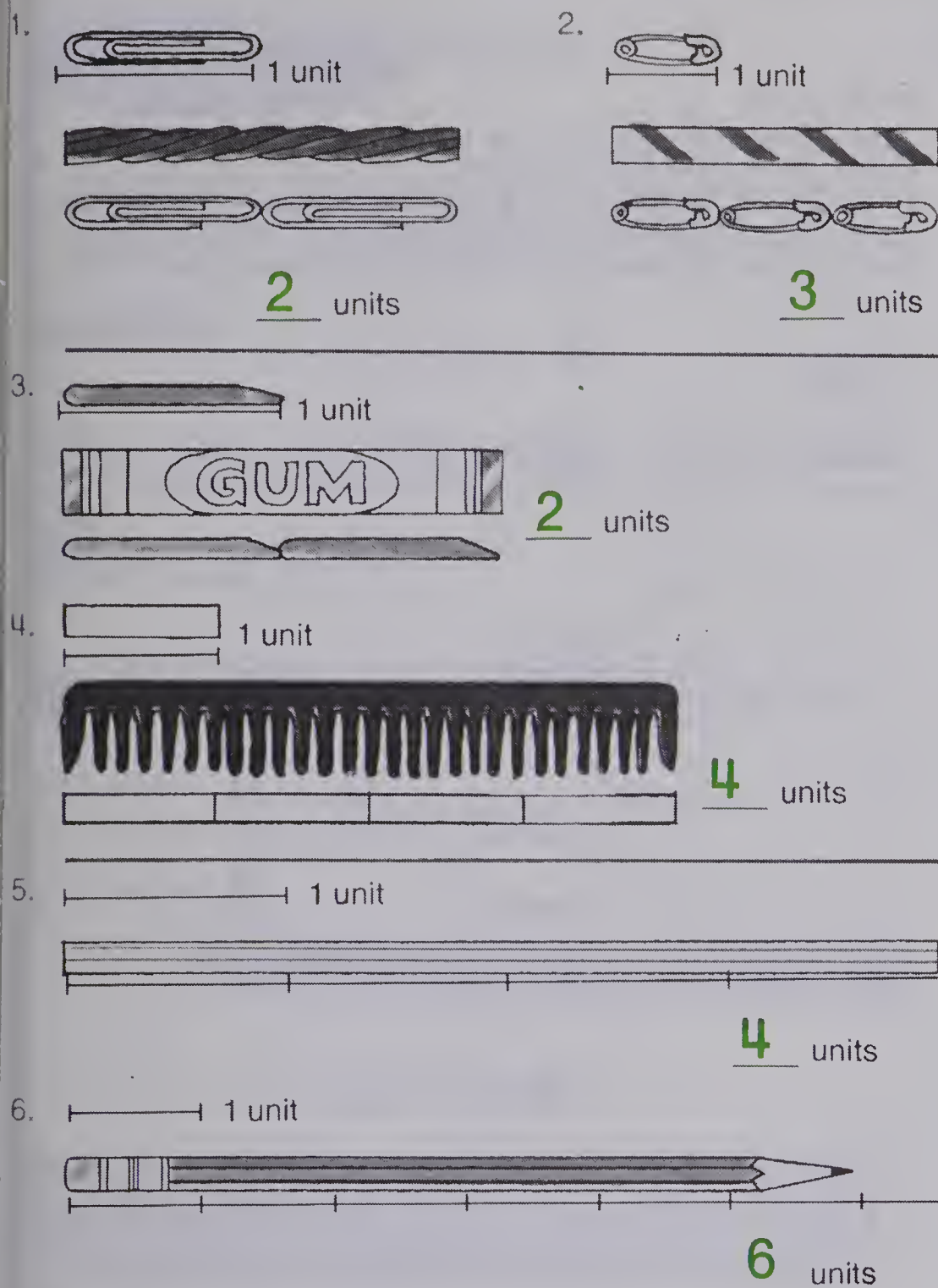
Concept of an arbitrary unit of linear measure (two hundred seven) 207

Using the Book Panel 1: Explain that the length of the board is one unit. Have the child count how many units long the girl's desk is. Then have the child trace the numeral in the space.

Panel 2: Ask, "What unit is the girl using to measure this time? (her hand) How many hand-units long is her desk? (6)" Have the child trace the 6 in the space. Explain that there is only one desk but because different sized units were used, different numbers resulted. You might have the child measure a desk in the classroom using different sized units.

Panels 3-4: Have the child point to the unit shown and write the length of each crayon.

Panels 5-6: Use the same procedure as for panels 3-4. Ask, "Are the pens the same length? (yes) Why are the numbers different? (Because the pens were measured with different sized units.)"



208 (two hundred eight) Practice

ACTIVITIES

1. Tell the child to choose 5 objects in the room and measure them with his/her thumb. (Using thumbs as equal units, they can be placed side-by-side down the length of the object being measured.) Use a chart to record the number of thumb widths for each object. It might be enjoyable if children worked in pairs or small groups. In any case, you should prepare a similar chart showing how long each object is when the unit of measure is your thumb. Naturally, there will be obvious differences.

2. Have the child use paper clips and pencils to measure the width and length of a sheet of paper. Be sure the child understands that to measure means to count the number of units.

3. Give the child several drinking straws that are 8 cm and 15 cm in length and a sheet of paper. The child lays the 8 cm straws end-to-end along the longer edge of the paper. Write the sentence, "The paper is ___ straws long." Have the child write the appropriate numeral in the blank. Then have the child lay the 15 cm straws end-to-end along the same edge of the paper. Write the sentence that tells how many of these straws are needed to cover the edge. Discuss the fact that both sentences are true but different numbers are needed. Develop the idea that when we used "long" straws, it took fewer to cover the edge than when we used "short" straws.

Using the Book Panels 1-4: Have the child record the length of each object using the unit shown above it. Point out that each unit is also represented by a line segment.

Panels 5-6: In these panels, point out that the units employed are line segments rather than an object. Have the child write the measures. Some children may want to trace the unit and lay it out along the object for each part.

OBJECTIVES

To find lengths in centimetres

PACING

- Level A 209 All (1 guided)
210 All
- Level B 209 All (1 guided)
210 All
- Level C 209 All (1 guided)
210 All

VOCABULARY

centimetre(s)

MATERIALS

card strips which vary in length from 1-6 cm

SUGGESTIONS

Initial Activity Provide the child with a ruler marked in centimetres. (You may wish to have the child cut out the purple centimetre ruler at the bottom of page 209.) Have several objects for the child to measure. Help the child line up the left end of the ruler with one end of the object to be measured. The number of centimetres is the number the end of the object is closest to. Provide a lot of practice to develop this skill.

1.

Centimetre

1 unit

12345678910111213141516

centimetres

2 units

2 centimetres

2.

5 centimetres

8 centimetres

6 centimetres

9 centimetres

14 centimetres

12345678910111213141516

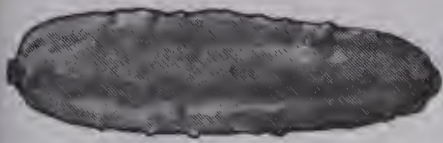
centimetres

Introducing the centimetre as a unit of linear measure (two hundred nine) 209

Using the Book Panel 1: Call attention to the unit (line segment) at the top of the page and to the upper bottle cap. Ask, “How many units long is the bottle cap? (2)” After the child has traced the answer, say that this unit is called a centimetre. Have the child point to the word centimetres on the picture of the ruler. Ask, “How many centimetres long is the bottle cap? (2)” Have the child write and read this answer.

Panel 2: Have the child cut out and use the ruler at the bottom of the page to measure each object pictured in Panel 2. Have the child record each answer.

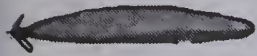
209



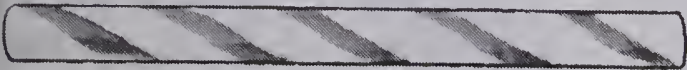
7 centimetres



10 centimetres



4 centimetres



11 centimetres



2 centimetres



16 centimetres

1 centimetres

3 centimetres

15 centimetres

Name _____

210 (two hundred ten) Practice

ACTIVITIES

1. Have the child measure objects in the classroom. The child should keep a record of the measurements that have been made. Use them later in making up problems comparing the lengths.

2. Have the child start Bulletin Board suggestion 1 in the Chapter Overview with a picture of a centimetre ruler.

3. Using oaktag, prepare geometric shapes whose dimensions are in centimetres. Identify each figure with a letter. Have the child record the dimensions of each figure.

4. Have the child draw line segments of a specific length, i.e. 5 cm, 3 cm, etc.

5. Give the child strips of yarn, pre-cut to various centimetre lengths. Have the child use the yarn to make figures on the flannel board (square, triangle). Then have the child measure the sides of the figures and record the lengths.

Using the Book These exercises are a continuation of page 209. Be sure the child lines up the left end of the ruler with the left end of the object to be measured. Note the last three pictures to be measured are line segments. Have the child measure and record the measurement of each object or line segment on the page. You might help the child identify each pictured object.

OBJECTIVE

To recognize when two containers hold the same amount
To identify how many of a smaller container are needed to fill a larger container.

PACING

- Level A All (guided)
- Level B All (guided)
- Level C All (guided)

VOCABULARY

holds the same

MATERIALS

bottles, glasses, cans, of different sizes

SUGGESTIONS

Initial Activity Using suitable containers, illustrate the situation in panel 1. Ask a student to pour the water from one container to another. Then use containers that do not hold the same amount. Discuss this by asking “Do these two hold the same amount of water?”

Have a jar and a smaller container of such a size that the larger holds a whole number (perhaps 4) of the smaller one. Have the child use the small container to fill the larger. The other students can count the number needed.

Holds the Same

1.

2.

3.

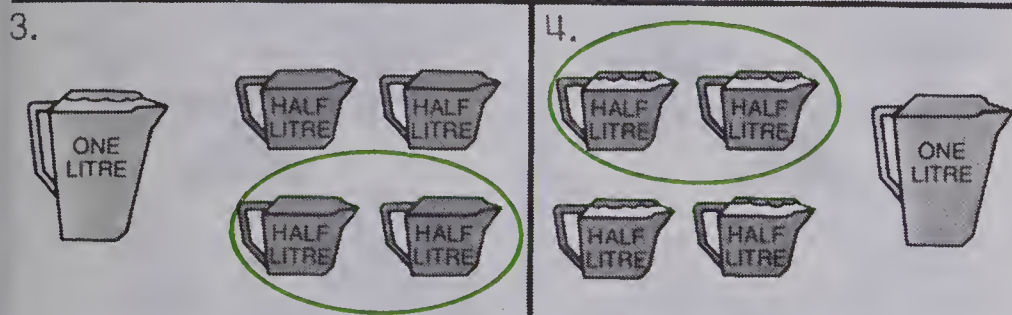
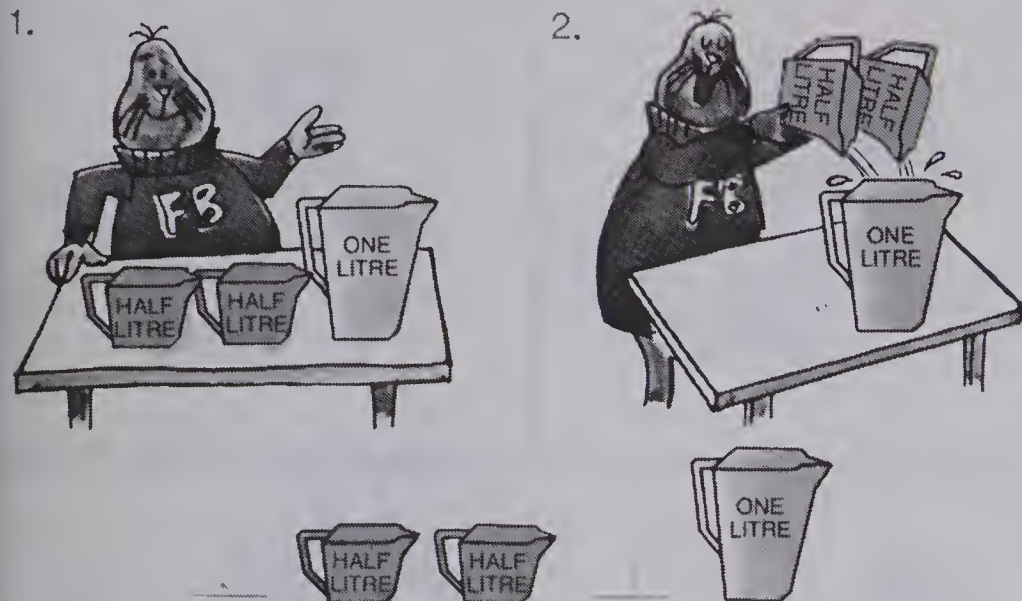
4.

5.

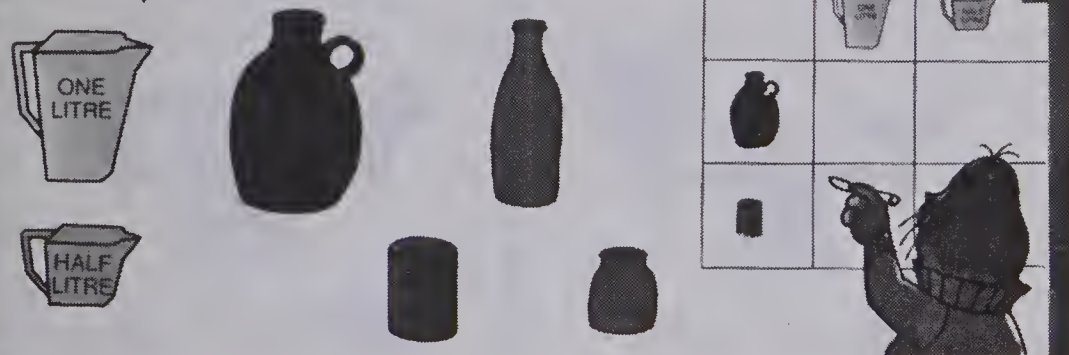
Capacity (two hundred eleven) 211

Using the Book Panel 1: Ask the student what the picture shows; does the bottle hold the same amount as the glass?
Panels 2-3: Draw a ring around the two containers if they hold the same; draw an X on the two containers if they do NOT hold the same.
Panels 4-5: Write the number that shows how many small glasses are needed to fill the larger container.

Litre



Activity



212 (two hundred twelve) Introducing the liter, half liter • Activity: Comparing capacity

Using the Book Panel 1: Explain that the orange container is called a liter and the blue containers are called half liters.

Panel 2: Ask, "What is Flub Blub doing? (Pouring both blue half liter containers into the orange liter container.)" Say, "When Flub Blub is finished the liter container will be full. Two half liters hold the same amount as 1 liter." Have the child trace the 2 and 1 and repeat the sentence.

Panel 3: Point out that the liter container is full. Ask, "How many half liter containers will 1 liter of water fill? (2)" Have the child draw a ring around 2 half liter containers.

Panel 4: Ask, "How many half liters of water will fill the liter container? (2)" Have the child draw a ring around 2 half liters.

Activity: Provide several familiar containers (jars, jugs, cans, bottles, etc.). Prepare a chart similar to that pictured in the activity. Have the children work in pairs to determine if the container holds more or less than 1 liter and more or less than a half liter. One child can record the findings by writing more or less on the chart.

OBJECTIVE

To identify litre and half litre

PACING

Level A All (guided)
Level B All (guided)
Level C All (1-2 guided)

VOCABULARY

litre, half litre

MATERIALS

one litre container, two half litre containers

SUGGESTIONS

Initial Activity Show a litre container and tell the child it is one litre. Then show two half litre containers. Fill one half litre and pour it into the other. Say, "They hold the same amount." Fill both and pour them into the litre container. Elicit that two half litres hold the same amount as one litre. Pour the water back to show one litre holds the same amount as two litres.

The activity on this page introduces "which is more?" This can eventually be associated with prices for a consumer discussion of which is the better buy. At this level only "which is more" is discussed.

ACTIVITIES

1. Let the child experiment with pouring. Elicit that certain familiar containers hold more, less, or about one litre or half litre.

2. Have the child continue Bulletin Board suggestion 1 in the Chapter Overview. Include a litre.

3. Use food coloring for varying amounts of colored water. The child can mix premeasured amounts of water to make different colors. For example: a half litre of yellow and a half litre of blue water makes green water. A litre of red water and a half litre of blue water makes purple water.

OBJECTIVES

To identify which of two objects on a balance scale is the heavier (lighter)
To identify how many non-standard mass units are the same (mass) as a given object on a balance scale

PACING

Level A All (guided)
Level B All (guided)
Level C All (1-3 guided)

VOCABULARY

heavier, lighter, mass

MATERIALS

balance scale, bricks, number of objects, (see Chapter Overview for constructing a balance scale)

SUGGESTIONS

Initial Activity Have a child put two objects on the balance scale—one on each side. Ask: “Are they the same?” or “Which is heavier?” and “Which is lighter?”

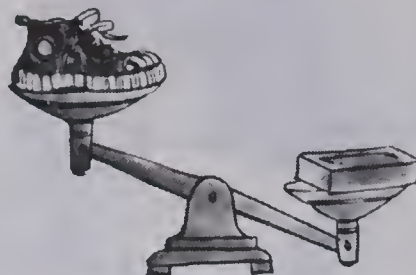
Have another child put an object on one side of the balance and bricks on the other side until the two sides balance. Ask: “How many bricks have the same mass as the ?”

ACTIVITIES

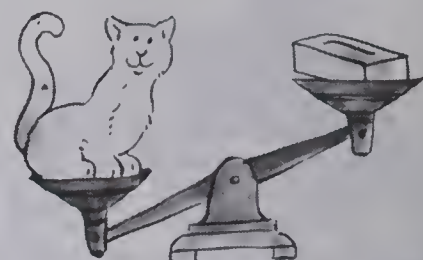
Let the children experiment with the balance and a number of objects. Encourage them to find pairs of things that have the same mass. Also ask them to find how many bricks are needed to be the same as certain objects you identify.

Mass

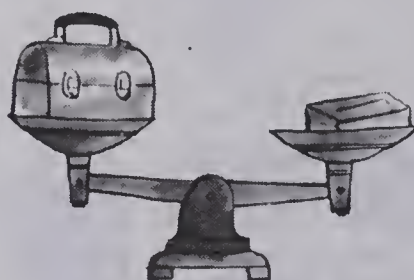
1.



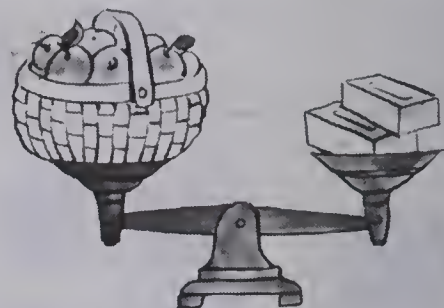
2.



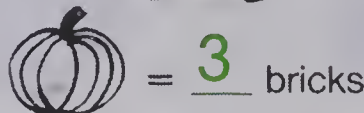
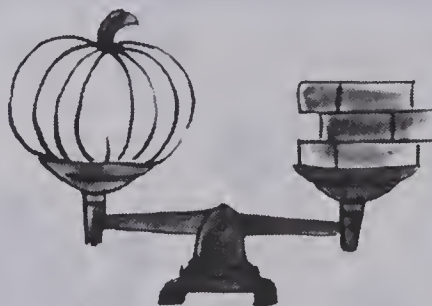
3.



4.



5.



6.



Mass (two hundred thirteen) 213

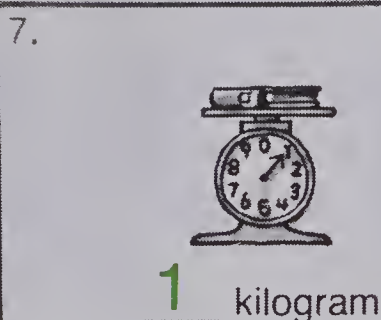
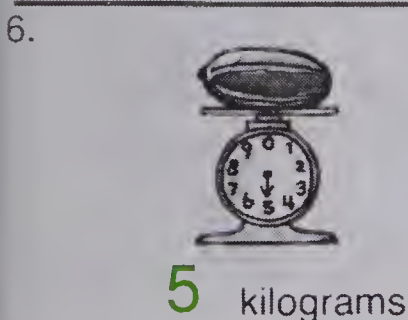
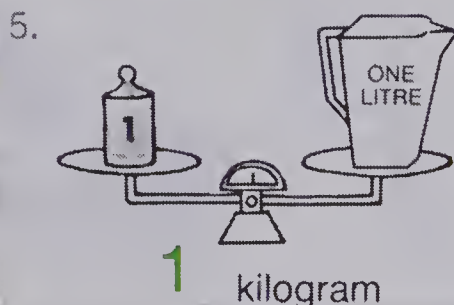
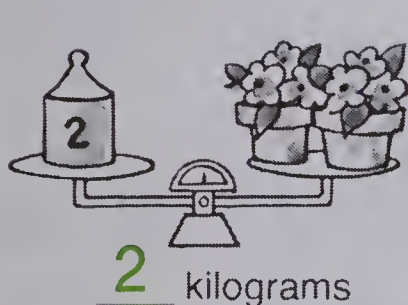
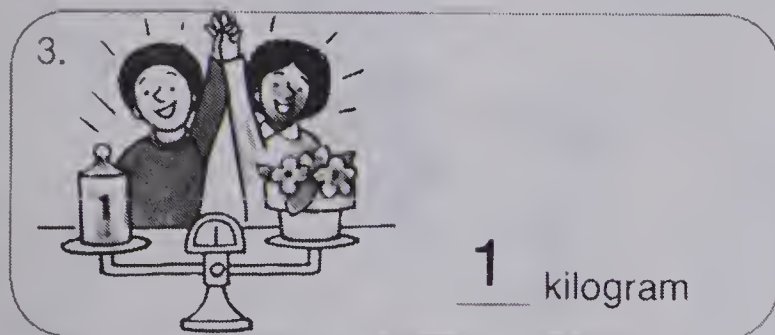
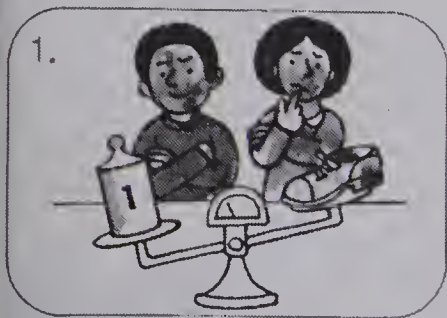
Using the Book Panels 1-2: Explain that the shoes are heavier and that the brick is lighter. Then ask which is heavier (lighter), the cat or the brick.

Panel 3: Have the child explain that since the scale balances, both objects have the same mass. Have the child tell that the lunch bucket is the same as one brick.

Panel 4-5: Follow the same procedure as in Panel 3 to elicit that the fruit has the same mass as two bricks, and the pumpkin is the same mass as three bricks.

Panel 6: Treat the kilogram mass as just another unit here; it will be introduced properly on the next page. Elicit that the brick is the same mass as the object marked 1 kg (kilogram). You can tell the student that the symbol for kilogram is kg.

Kilogram



214 (two hundred fourteen) Introducing the kilogram

Using the Book Panel 1: Have the child identify the objects on the scale. (1 kg mass, a shoe) Ask, "Which has a greater mass?"

Panel 2: Follow the same procedure to elicit that the brick has the greater mass.

Panel 3: Ask, "What is the mass of the flower pot? (1 kg)" Have the child explain that since the scale balances, both objects have the same mass. Have the child trace the one and say "1 kg".

Panels 4-5: Have the child write the number of kilograms for the object on the right. (For Panel 4, you may wish to point out that the flower pot above has a mass of 1 kg therefore 2 of them must have a mass of 2 kg.)

Panels 6-7: Point out that these are different kinds of scales. Tell the child we read the number of kilograms off the dial on the front. Have the child record the mass of each object.

OBJECTIVES

To read a scale
To identify kilogram

PACING

Level A All (1-6 guided)
Level B All (1-6 guided)
Level C All (1-4 guided)

VOCABULARY

balance scale, kilogram(s), mass, weigh

MATERIALS

balance scale: 1, 2, 3, 4, 5 (marked)
kilogram masses, socks filled with sand with masses of 1, 2, 3, 4 kg (See Chapter Overview for constructing a balance scale.)

SUGGESTIONS

Initial Activities 1. Put the 1 kg mass on one side of the balance and a sand filled sock with a mass of 1 kg on the other side. Ask, "Do the objects have the same mass?" (Yes, because they balance) "How much does the sock weigh? (1 kg)" Have the child choose other objects and find their masses.

2. Display a scale. Discuss the arrangement of the numerals on the dial. Direct attention to the fact that the hand on the scale points to 0 when nothing is on it.

ACTIVITIES

1. Have the child cut pictures of different types of scales from magazines. The child may create a display using these pictures.

2. Have the child include a balance scale in Bulletin Board suggestion 1 in the Chapter Overview.

3. Have the child find the masses of objects that require using 2 or more known masses, i.e., 6 kg, which can be balanced by using 5 kg and 1 kg masses. Find the masses of several objects in this manner.

OBJECTIVE

To read a thermometer

PACING

- Level A All (guided)
- Level B All (1 guided)
- Level C All (1 guided)

VOCABULARY

thermometer, degrees, temperature

MATERIALS

demonstration and real thermometer

SUGGESTIONS

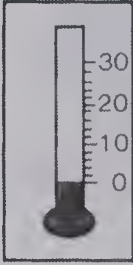
- Initial Activities
1. Use a large demonstration thermometer and show the marks on it. Tell the child that the long marks are for every ten degrees. Point out the short marks, and explain that the short marks show the degrees by twos.
 2. Set the demonstration thermometer for various readings (even numbers only) and have the child write the temperature for each setting.

ACTIVITIES


Additional Activities Use the real thermometer to record the outside temperature each day. Have the child keep a chart, or keep a class chart of the temperatures for a month.

Temperature

1.

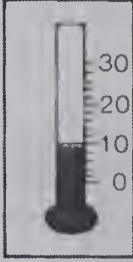



Cold



_____ degrees

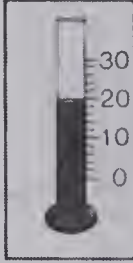
2.






10 degrees

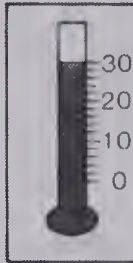
3.






20 degrees

4.



Hot



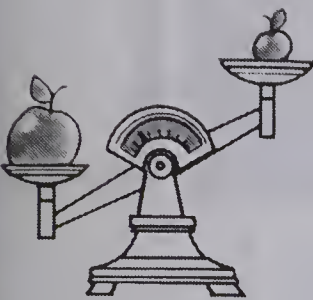
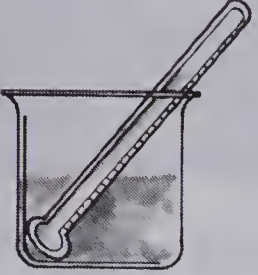
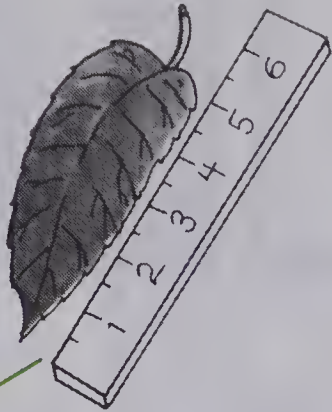
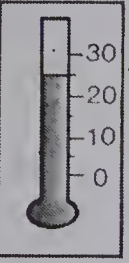

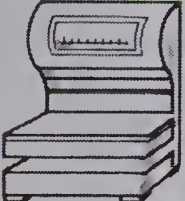
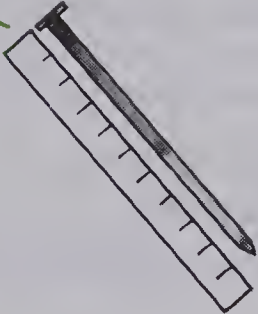
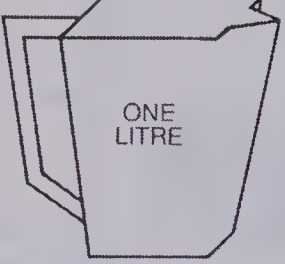
30 degrees

Introducing the thermometer and degrees Celsius

(two hundred fifteen) 215

Using the Book Panel 1-4: Direct the child to write the temperature in the blank.

Measuring

1. 	2. 	3. 
4. 	5. <input type="checkbox"/> thermometer <input type="checkbox"/> ruler <input type="checkbox"/> scale <input type="checkbox"/> litre container	6. 
7. 	8. 	9. 

216 (two hundred sixteen)

Introducing the names of measuring instruments

OBJECTIVES

To name the measuring instruments: scale, thermometer, ruler, litre container

PACING

Level A	All
Level B	All
Level C	All

MATERIALS

scales (several types), rulers, thermometers, litre containers

SUGGESTIONS

Initial Activities Put out the instruments on a table, along with cards, each card having the name of an instrument written on it. Ask the child to match the cards and instruments.

ACTIVITIES

Have the child cut out pictures of different measuring instruments. A display for the bulletin board may be developed.

Using the book Panel 1-9: Direct the child to draw a line from the box in front of the word to the matching picture. Tell the child there may be more than one line to some of the words.

OBJECTIVE

To solve mini-problems, sum 10 or less

PACING

- Level A All (guided)
- Level B All (1-2 guided)
- Level C All (1 guided)

SUGGESTIONS


Initial Activity Write an addition or subtraction on the chalkboard. Ask the child to make up a story about the example and solve it. Write another example on the chalkboard. Write a simple mini-problem to go with the example. Assist the child in reading and solving it.


You might discuss what a food scientist does. Ask questions as, "What kind of food is good (nutritious) for you? How is food stored? (boxes, cans, etc.) Are cans stronger than boxes? Will milk spoil if it is not refrigerated?"

ACTIVITIES

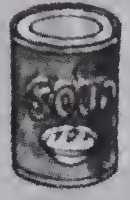
1. Have the child make up a story to fit $7 + 3 = 10$. Have another child make up a story to fit $10 - 3 = 7$. Use other examples.
2. You might have the child bring in various vegetables (potatoes, onions, carrots) and plant them. Watching them grow can be an ongoing project.
3. Have the child play Basic Fact Wheels, as described in the Activity Reservoir, for sums 8-10.
4. Have the child cut pictures of different types of food from magazines to make a collage.
5. Have the child play Basic Fact Practice Cards as described in the Activity Reservoir.
6. You may wish to have the child bring in a piece of potato and a piece of bread and let them sit on the side to mold. This can inspire a discussion. How many days did each take to mold? Does the mold on both look the same?

What's In Food?






carton of milk



can



meat

1. 10 cartons of milk. 8 spoiled. How many are left?	$\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$
2. 4 empty cans. 6 full cans. How many in all?	$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$
3. 9 pieces of meat. 3 were used. How many are left?	$\begin{array}{r} 9 \\ - 3 \\ \hline 6 \end{array}$
4. 5 women working. 4 men working. How many people in all?	$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$

Solving mini-problems (two hundred seventeen) 217

Using the Book Discuss the picture at the top of the page. See Career Awareness in the Chapter Overview. Then have the child look at the pictures and words on the left. Ask the child to tell what each picture shows. Have the child look at the word and say it.

Panel 1: Read the first problem. Ask, "Do we add or subtract to find how many are left? (subtract)" Have the child trace the 10 minus 8 in the box on the right. Associate these numbers with the numbers in the problem. Then have the child find the difference and say, "Two are left."

Panels 2-4: Follow procedures similar to panel 1.

THINK!

 <div style="border: 1px solid black; height: 100px; margin: 10px;"></div> <div style="border: 1px solid black; height: 100px; margin: 10px;"></div>	 <div style="border: 1px solid black; height: 100px; margin: 10px;"></div> <div style="background-color: blue; border: 1px solid black; height: 100px; margin: 10px;"></div>	 <div style="background-color: yellow; border: 1px solid black; height: 100px; margin: 10px;"></div> <div style="border: 1px solid black; height: 100px; margin: 10px;"></div>	 <div style="border: 1px solid black; height: 100px; margin: 10px;"></div> <div style="border: 1px solid black; height: 100px; margin: 10px; position: relative;"> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); width: 10px; height: 10px; background-color: green;"></div> </div>
 <u>2</u> centimetres	 <u>5</u> centimetres		
 <u>2</u> kilograms	 <u>20</u> degrees		
 <u>2</u> kilograms	 <u>5</u> kilograms		

218 (two hundred eighteen) Chapter 10 Test

OBJECTIVE

To evaluate achievement of the Chapter Objectives

PACING

Level A	All
Level B	All
Level C	All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill that was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Make some closed figures on the flannel board with yarn. Have the child place an object inside, outside, and on the figure.
2. Give the child several objects to measure with a centimetre ruler.
3. Have the child find the mass of several objects to the nearest kilogram using a scale.
4. Have the child find the mass of several objects on a balance scale using a set of 1, 2, and 4 kg masses.

Using the Book This is a diagnostic test. The page references are given for re-teaching as needed. The letter indicates the objective.

Panel 1: Tell the child to trace over the circle in red. [page 198 A]

Panel 2: Have the child color the outside of the triangle blue. [page 201 A]

Panel 3: Have the child color the inside of the rectangle yellow. [page 202

A]

Panel 4: Have the child use a green crayon to mark a point on the square. [page 204 A]

Panel 5: Have the child use a centimetre ruler to measure the candy stick to the nearest centimetre [page 209 B]

Panel 6: Have the child use a centimetre ruler to measure the crayon. [page 209 B]

Panel 7: Have the child draw a ring around as many containers on the right as are needed to fill the container on the left. [page 212 C]

Panel 8: Have the child write the temperature shown on the thermometer. [page 215 E]

Panel 9-10: The child is to write the number of kilograms. [page 214 D]

CHAPTER 11 OVERVIEW

LEVEL 11

Addition and subtraction of two-digit numbers, without regrouping, is introduced. The basic addition and subtraction facts are extended to include 11 and 12. The art theme for this chapter is "Community Helpers."

OBJECTIVES

- A To add multiples of ten, no regrouping
- B To subtract multiples of ten, no regrouping
- C To add tens and ones to tens and ones, and ones to tens and ones, no grouping
- D To subtract tens and ones from tens and ones, and ones from tens and ones, no grouping
- E To add, in vertical form, sums 11 and 12
- F To subtract, in vertical form, from 11 and 12
- G To solve mini-problems
- H To complete repeated addition counting exercises for multiplication readiness
- I To share sets of objects for division readiness

BACKGROUND

1. When we add two-digit numbers, the order and grouping (commutative and associative) properties are used to justify adding ones and adding tens. That is, $43 + 52 =$

$$\begin{aligned} &(4 \text{ tens} + 3) + (5 \text{ tens} + 2) \\ &(4 \text{ tens} + 5 \text{ tens}) + (3 + 2) \end{aligned}$$

This development is too formal. Consequently we use sets of ten-boxes and loose blocks to develop this addition algorithm. It is natural to put loose blocks together and to put ten-boxes together. By stressing this order the foundation for adding ones, then tens, and for regrouping later, is established.

2. A similar activity with blocks and boxes establishes the procedure to be used in subtraction. To subtract 24 from 56 we begin with five ten-boxes and six blocks. First 4 blocks are removed from the 6 blocks, then 2 ten-boxes are removed from the 5 ten-boxes. Again stress the order, ones then tens.

3. The sentence $(4 + 2) + 3 = 4 + (2 + 3)$ illustrates the grouping (associative) property of addition. The sentence $9 + 3 = 3 + 9$ illustrates the order (commutative) property of addition. It is these properties that allow us to add three addends in any order and grouping.

$$\begin{aligned} 7 + (2 + 3) &= 7 + (3 + 2) \text{ order property} \\ &= (7 + 3) + 2 \text{ grouping property} \\ &= 10 + 2 \text{ addition} \end{aligned}$$

This example illustrates grouping to ten. While this development is too formal to use with children, the ideas and the process should be stressed. See Background Chapter 12.

4. Multiplication can be thought of as repeated addition. Multiplication readiness experiences are presented in this form. For example, joining four groups, each with two members, leads to the sentence $2 + 2 + 2 + 2 = 8$, which is in turn replaced by: four 2's = 8.

Division is introduced through sharing. Students give each person one, then another one until all are gone. This is to be done with objects first. Hence division readiness experiences are provided in the form of sharing a group into clusters. A group of 8 objects shared into groups of 4 leads to the sentence $8 = \text{two } 4\text{'s}$. The division sentence $8 \div 4 = 2$ is not introduced at this time.

MATERIALS

9 full ten-boxes
10 red blocks
10 blue blocks
10 green blocks
balloons
cardboard grid (See page 231.)
10 red disks
10 blue disks
2 row dot cards for sums 11 and 12
wire circle, triangle, rectangle
cereal box
centimetre ruler

CAREER AWARENESS

Police Officers [230]

At this level stress the role of the police officer as a community helper; a person who directs traffic, who can answer questions about the community, and who enforces the laws that help society run smoothly. You might wish to check on the training a police officer in your community receives.

It is important that children develop an awareness of the performance of others. They should also develop the awareness that they too could perform such jobs. Children should realize that police officers perform a service to the community. We rely on them for our safety. It is their skill and knowledge that often saves lives.

Photo description: These police officers are on "foot patrol." This enables them to become familiar with the neighborhood as well as with the residents.

BULLETIN BOARD

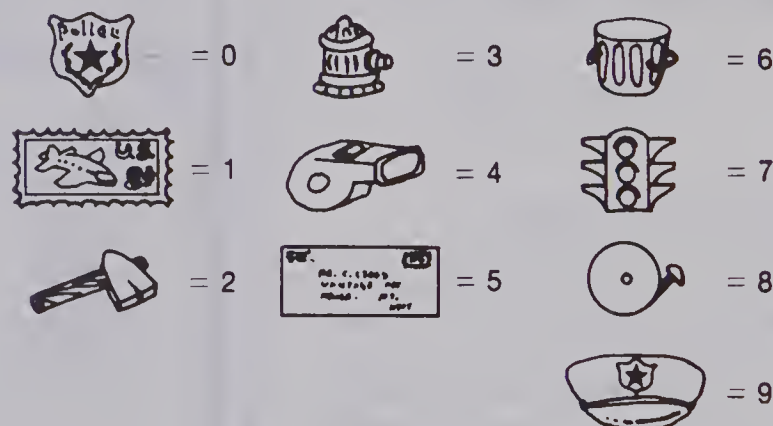
1. The art theme of this chapter is "Community Helpers." The children should enjoy taking a trip to visit some of their favorite community helpers. Take a camera on the trip and have the children take pictures of the community helpers they meet.

Make a bulletin board display with these pictures and have the children write stories about their trip.

2. The following bulletin board might be a good device in reviewing related addition and subtraction sentences for sums 11 and 12. Draw a large picture of a mail carrier with letters (addition and subtraction sentences) to be delivered to the appropriate mailbox.

The mail carrier holds a horizontal addition or subtraction card for the sum 11, such as $4 + 7 = 11$. Place all the other horizontal practice cards for sum 11 in a plastic bag and tack it to the bulletin board. Challenge a child to show the other letters that belong in that mailbox by choosing the appropriate related addition and subtraction sentences for $4 + 7 = 11$. If you display more than one mail carrier and mailbox, you might make this a contest. Using a 3 minute egg timer, see which child delivers all the letters first.

3. Create addition and subtraction exercises involving 2-digit numerals (no regrouping) using a code. Since the theme of this chapter is Community Helpers use the following code:



Display this code on the top of the bulletin board and create two-digit addition and subtraction exercises (no regrouping) using the code.

The child replaces each picture with its corresponding numeral by referring to the code and then adds or subtracts.

SPECIAL NOTES

1. Since the theme for this chapter is Community Helpers the consumer discussion for this chapter is how tax dollars pay for community services. The suggestion for leading a consumer discussion only appears on page 230, under Suggestions. However, extend the discussion to include page 227.

2. Color is used as an aid in visualizing the addition and subtraction operations for two-digit numbers. When ten-boxes and single blocks are used for illustrating addition, each addend is represented by a different color. For subtraction, all boxes and blocks are the same color. X's are used to represent taking away.

OBJECTIVE

To add tens

PACING

- Level A All (1-2 guided)
- Level B All (1-2 guided)
- Level C All (1 guided)

MATERIALS

9 full ten-boxes

SUGGESTIONS

Initial Activity Display 4 full ten-boxes and write 4 tens on the chalkboard. Then have the child count the blocks and write 40 on the chalkboard. Do the same with 3 ten-boxes. Ask the child how many ten-boxes there are in all. Write 7 tens underneath 3 tens on the chalkboard. Ask how many blocks in all. (70) If necessary, have the child re-count all the blocks. Write 70 under 30 on the chalkboard. Have the child draw lines to connect 3 tens and 30, 4 tens and 40, and 7 tens and 70.

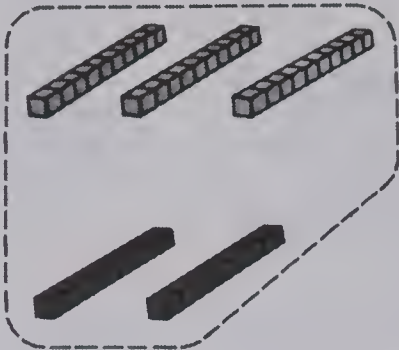
4 tens → 40
 3 tens → +30
 7 tens → 70

ACTIVITIES

1. Write several short form problems on the board. Play Queen's Plate as described in the Activity Reservoir.
2. Play Bingo as described in the Activity Reservoir. Use vertical form as 50 + 30. Your call would be 80.
3. Have the child play Matching the Sum as described in the Activity Reservoir. Use vertical form as 20 + 30.

Adding

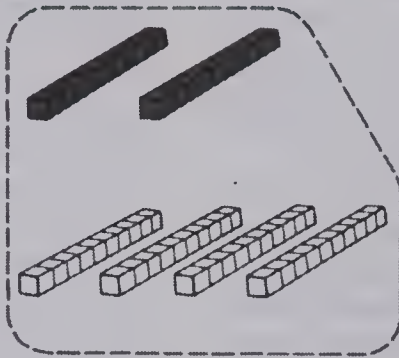
1.



Add.

3 tens	30
2 tens	+ 20
<u>5 tens</u>	<u>50</u>

2.



Add.

2 tens	20
4 tens	+ 40
<u>6 tens</u>	<u>60</u>

3.

Add.

2 tens	20
2 tens	+ 20
<u>4 tens</u>	<u>40</u>

4.

Add.

1 ten	10
8 tens	+ 80
<u>9 tens</u>	<u>90</u>

5.

50	40	30	20	40
+ 20	+ 40	+ 10	+ 60	+ 30
<u>70</u>	<u>80</u>	<u>40</u>	<u>80</u>	<u>70</u>

Adding tens, no regrouping (two hundred nineteen) 219

Using the Book Panel 1: Ask, "How many red ten-boxes? (3) How many green ten-boxes? (2) How many ten-boxes in all? (5)" Say, "When we add, 3 tens plus 2 tens is how many? (5 tens)" Have the child trace the 5 in the 5 tens. Point out that 30 is a name for 3 tens and 20 is a name for 2 tens. Ask, "30 plus 20 is what? (50)" Say, "50 is the short name for 5 tens." Have the child trace 50.

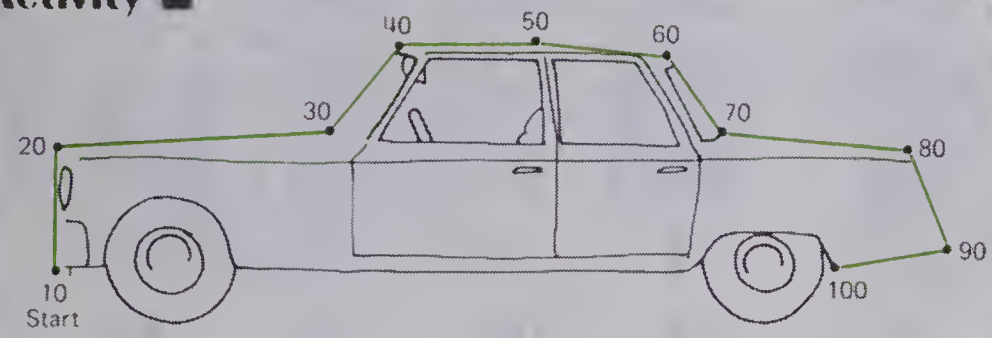
Panel 2: Relate 2 tens and 4 tens to the picture. Ask, "2 tens plus 4 tens is how many tens?" Have the child write 6. Direct attention to 20 + 40. Have the child write 60. You may have the child draw a line from 6 tens to 60, stressing these are two names for the same number.

Panels 3-4: Direct the child to add the tens and then add the same numbers again. To check, ask the child to draw a line between the sums. The sums should be names for the same number.

Panel 5: Have the child find the sums.

1.	$\begin{array}{r} 30 \\ + 60 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ + 20 \\ \hline 30 \end{array}$	$\begin{array}{r} 40 \\ + 30 \\ \hline 70 \end{array}$	$\begin{array}{r} 10 \\ + 10 \\ \hline 20 \end{array}$	$\begin{array}{r} 50 \\ + 40 \\ \hline 90 \end{array}$	$\begin{array}{r} 70 \\ + 20 \\ \hline 90 \end{array}$
2.	$\begin{array}{r} 80 \\ + 10 \\ \hline 90 \end{array}$	$\begin{array}{r} 60 \\ + 20 \\ \hline 80 \end{array}$	$\begin{array}{r} 50 \\ + 20 \\ \hline 70 \end{array}$	$\begin{array}{r} 10 \\ + 60 \\ \hline 70 \end{array}$	$\begin{array}{r} 20 \\ + 30 \\ \hline 50 \end{array}$	$\begin{array}{r} 10 \\ + 70 \\ \hline 80 \end{array}$
3.	$\begin{array}{r} 40 \\ + 50 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ + 50 \\ \hline 60 \end{array}$	$\begin{array}{r} 30 \\ + 50 \\ \hline 80 \end{array}$	$\begin{array}{r} 20 \\ + 40 \\ \hline 60 \end{array}$	$\begin{array}{r} 40 \\ + 40 \\ \hline 80 \end{array}$	$\begin{array}{r} 30 \\ + 30 \\ \hline 60 \end{array}$
4.	$\begin{array}{r} 20 \\ + 20 \\ \hline 40 \end{array}$	$\begin{array}{r} 30 \\ + 10 \\ \hline 40 \end{array}$	$\begin{array}{r} 60 \\ + 10 \\ \hline 70 \end{array}$	$\begin{array}{r} 20 \\ + 70 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ + 80 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ + 40 \\ \hline 50 \end{array}$
5.	$\begin{array}{r} 30 \\ + 30 \\ \hline 60 \end{array}$	$\begin{array}{r} 40 \\ + 20 \\ \hline 60 \end{array}$	$\begin{array}{r} 50 \\ + 10 \\ \hline 60 \end{array}$	$\begin{array}{r} 20 \\ + 60 \\ \hline 80 \end{array}$	$\begin{array}{r} 30 \\ + 40 \\ \hline 70 \end{array}$	$\begin{array}{r} 20 \\ + 10 \\ \hline 30 \end{array}$
6.	$\begin{array}{r} 30 \\ + 20 \\ \hline 50 \end{array}$	$\begin{array}{r} 40 \\ + 10 \\ \hline 50 \end{array}$	$\begin{array}{r} 50 \\ + 30 \\ \hline 80 \end{array}$	$\begin{array}{r} 60 \\ + 20 \\ \hline 80 \end{array}$	$\begin{array}{r} 70 \\ + 10 \\ \hline 80 \end{array}$	$\begin{array}{r} 10 \\ + 30 \\ \hline 40 \end{array}$

Activity



220 (two hundred twenty) Practice, adding tens: Activity, counting by 10's

EXTRA PRACTICE

Tell the child to add.

1.	$\begin{array}{r} 30 \\ +20 \\ \hline 50 \end{array}$	$\begin{array}{r} 70 \\ +10 \\ \hline 80 \end{array}$	$\begin{array}{r} 20 \\ +20 \\ \hline 40 \end{array}$	$\begin{array}{r} 60 \\ +20 \\ \hline 80 \end{array}$	$\begin{array}{r} 30 \\ +20 \\ \hline 50 \end{array}$
2.	$\begin{array}{r} 80 \\ +10 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ +20 \\ \hline 30 \end{array}$	$\begin{array}{r} 10 \\ +10 \\ \hline 20 \end{array}$	$\begin{array}{r} 70 \\ +20 \\ \hline 90 \end{array}$	$\begin{array}{r} 30 \\ +30 \\ \hline 60 \end{array}$
3.	$\begin{array}{r} 10 \\ +30 \\ \hline 40 \end{array}$	$\begin{array}{r} 50 \\ +30 \\ \hline 80 \end{array}$	$\begin{array}{r} 40 \\ +10 \\ \hline 50 \end{array}$	$\begin{array}{r} 30 \\ +30 \\ \hline 60 \end{array}$	$\begin{array}{r} 40 \\ +20 \\ \hline 60 \end{array}$
4.	$\begin{array}{r} 10 \\ +60 \\ \hline 70 \end{array}$	$\begin{array}{r} 40 \\ +40 \\ \hline 80 \end{array}$	$\begin{array}{r} 30 \\ +10 \\ \hline 40 \end{array}$	$\begin{array}{r} 50 \\ +20 \\ \hline 70 \end{array}$	$\begin{array}{r} 20 \\ +30 \\ \hline 50 \end{array}$
5.	$\begin{array}{r} 10 \\ +80 \\ \hline 90 \end{array}$	$\begin{array}{r} 70 \\ +10 \\ \hline 80 \end{array}$	$\begin{array}{r} 50 \\ +40 \\ \hline 90 \end{array}$	$\begin{array}{r} 10 \\ +70 \\ \hline 80 \end{array}$	$\begin{array}{r} 10 \\ +10 \\ \hline 20 \end{array}$
6.	$\begin{array}{r} 60 \\ +20 \\ \hline 80 \end{array}$	$\begin{array}{r} 50 \\ +30 \\ \hline 80 \end{array}$	$\begin{array}{r} 70 \\ +20 \\ \hline 90 \end{array}$	$\begin{array}{r} 30 \\ +20 \\ \hline 50 \end{array}$	$\begin{array}{r} 80 \\ +10 \\ \hline 90 \end{array}$

Using the Book Panels 1-6: Tell the child to add.

Activity: Before doing this activity, reinforce counting by tens. Have the child count by tens, starting at 10, and connect the dots in order while counting. This is a picture of a car.

OBJECTIVE

To add tens and ones

PACING

- Level A 221 All (1-2 guided)
222 All
- Level B 221 All (1-2 guided)
222 All
- Level C 221 All (1 guided)
222 All

MATERIALS

9 full ten-boxes, 9 blocks

BACKGROUND

See Item 1 of the Chapter Overview Background.

SUGGESTIONS

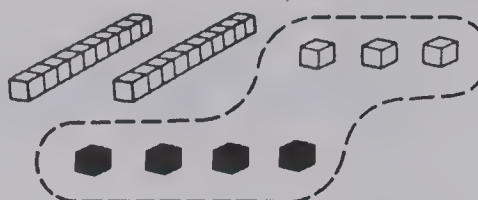
Initial Activity Display 2 full ten-boxes and 5 blocks and then 1 full ten-box and 3 blocks. Have the child give the expanded and two-digit numeral for the number of blocks in each display. Ask, "How many blocks in all?" Write and discuss this addition situation on the chalkboard.

2 tens + 5 \longrightarrow 25
1 ten + 3 \longrightarrow +13
3 tens + 8 \longrightarrow 38

ACTIVITIES

1. Write examples of the short form on index cards. The child picks a card and finds the sum. Time the child. Repeat until all the cards are gone. Tell the child the object is to beat each previous time.
2. Have the child use dimes and pennies to illustrate additions.
3. Play Matching the Sum as described in the Activity Reservoir. Use the short form.

1.



Adding

Add.

tens	ones
2	3
	4
2	7

$$\begin{array}{r} 23 \\ + 4 \\ \hline 27 \end{array}$$

2.

$$\begin{array}{r} 43 \\ + 2 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 30 \\ + 6 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 54 \\ + 1 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 72 \\ + 4 \\ \hline 76 \end{array}$$

$$\begin{array}{r} 82 \\ + 6 \\ \hline 88 \end{array}$$

$$\begin{array}{r} 60 \\ + 5 \\ \hline 65 \end{array}$$

3.

$$\begin{array}{r} 91 \\ + 8 \\ \hline 99 \end{array}$$

$$\begin{array}{r} 43 \\ + 5 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 37 \\ + 2 \\ \hline 39 \end{array}$$

$$\begin{array}{r} 80 \\ + 4 \\ \hline 84 \end{array}$$

$$\begin{array}{r} 76 \\ + 1 \\ \hline 77 \end{array}$$

$$\begin{array}{r} 35 \\ + 4 \\ \hline 39 \end{array}$$

4.

$$\begin{array}{r} 76 \\ + 2 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 61 \\ + 5 \\ \hline 66 \end{array}$$

$$\begin{array}{r} 42 \\ + 7 \\ \hline 49 \end{array}$$

$$\begin{array}{r} 61 \\ + 6 \\ \hline 67 \end{array}$$

$$\begin{array}{r} 83 \\ + 3 \\ \hline 86 \end{array}$$

$$\begin{array}{r} 54 \\ + 5 \\ \hline 59 \end{array}$$

5.

$$\begin{array}{r} 90 \\ + 8 \\ \hline 98 \end{array}$$

$$\begin{array}{r} 75 \\ + 3 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 68 \\ + 1 \\ \hline 69 \end{array}$$

$$\begin{array}{r} 81 \\ + 7 \\ \hline 88 \end{array}$$

$$\begin{array}{r} 50 \\ + 9 \\ \hline 59 \end{array}$$

$$\begin{array}{r} 46 \\ + 2 \\ \hline 48 \end{array}$$

6.

$$\begin{array}{r} 37 \\ + 2 \\ \hline 39 \end{array}$$

$$\begin{array}{r} 55 \\ + 3 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 46 \\ + 1 \\ \hline 47 \end{array}$$

$$\begin{array}{r} 72 \\ + 6 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 65 \\ + 4 \\ \hline 69 \end{array}$$

$$\begin{array}{r} 38 \\ + 1 \\ \hline 39 \end{array}$$

7.

$$\begin{array}{r} 71 \\ + 3 \\ \hline 74 \end{array}$$

$$\begin{array}{r} 60 \\ + 7 \\ \hline 67 \end{array}$$

$$\begin{array}{r} 44 \\ + 2 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 31 \\ + 7 \\ \hline 38 \end{array}$$

$$\begin{array}{r} 53 \\ + 2 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 47 \\ + 1 \\ \hline 48 \end{array}$$

Adding tens and ones, no regrouping (two hundred twenty-one) 221

Using the Book Panel 1: Ask, "How many yellow ten-boxes? (2) How many yellow blocks? (4)" Relate 2 tens + 4. Next ask, "How many green ten-boxes? (3) How many green blocks? (2)" Relate 3 tens + 2. Have the child trace the ring to join the blocks. Ask, "What is 4 plus 2? (6)" Point to this in the expanded form and have the child trace the 6. Have the child trace the ring to join the ten-boxes. Ask, "What is 2 tens plus 3 tens? (5 tens)" Have the child trace the 5. Point out that 24 is the short name for 2 tens + 4 and 32 is the short name for 3 tens + 2. Stress that we add ones first, "4 plus 2 is what? (6)" Have the child trace the 6. "2 plus 3 is what? (5)" Have the child trace the 5. "56 is the short name for 5 tens + 6."

Panels 2-7: Tell the child to add. Point out that we add ones first, then tens.

1.	$\begin{array}{r} 68 \\ + 1 \\ \hline 69 \end{array}$	$\begin{array}{r} 35 \\ + 4 \\ \hline 39 \end{array}$	$\begin{array}{r} 76 \\ + 3 \\ \hline 79 \end{array}$	$\begin{array}{r} 81 \\ + 5 \\ \hline 86 \end{array}$	$\begin{array}{r} 44 \\ + 3 \\ \hline 47 \end{array}$	$\begin{array}{r} 26 \\ + 2 \\ \hline 28 \end{array}$
2.	$\begin{array}{r} 71 \\ + 8 \\ \hline 79 \end{array}$	$\begin{array}{r} 22 \\ + 2 \\ \hline 24 \end{array}$	$\begin{array}{r} 18 \\ + 1 \\ \hline 19 \end{array}$	$\begin{array}{r} 30 \\ + 9 \\ \hline 39 \end{array}$	$\begin{array}{r} 46 \\ + 1 \\ \hline 47 \end{array}$	$\begin{array}{r} 35 \\ + 2 \\ \hline 37 \end{array}$
3.	$\begin{array}{r} 87 \\ + 2 \\ \hline 89 \end{array}$	$\begin{array}{r} 73 \\ + 4 \\ \hline 77 \end{array}$	$\begin{array}{r} 63 \\ + 2 \\ \hline 65 \end{array}$	$\begin{array}{r} 20 \\ + 6 \\ \hline 26 \end{array}$	$\begin{array}{r} 45 \\ + 1 \\ \hline 46 \end{array}$	$\begin{array}{r} 17 \\ + 2 \\ \hline 19 \end{array}$
4.	$\begin{array}{r} 93 \\ + 4 \\ \hline 97 \end{array}$	$\begin{array}{r} 46 \\ + 1 \\ \hline 47 \end{array}$	$\begin{array}{r} 80 \\ + 5 \\ \hline 85 \end{array}$	$\begin{array}{r} 74 \\ + 4 \\ \hline 78 \end{array}$	$\begin{array}{r} 61 \\ + 5 \\ \hline 66 \end{array}$	$\begin{array}{r} 36 \\ + 2 \\ \hline 38 \end{array}$
5.	$\begin{array}{r} 43 \\ + 5 \\ \hline 48 \end{array}$	$\begin{array}{r} 92 \\ + 7 \\ \hline 99 \end{array}$	$\begin{array}{r} 80 \\ + 4 \\ \hline 84 \end{array}$	$\begin{array}{r} 73 \\ + 1 \\ \hline 74 \end{array}$	$\begin{array}{r} 24 \\ + 5 \\ \hline 29 \end{array}$	$\begin{array}{r} 18 \\ + 1 \\ \hline 19 \end{array}$
6.	$\begin{array}{r} 23 \\ + 3 \\ \hline 26 \end{array}$	$\begin{array}{r} 66 \\ + 1 \\ \hline 67 \end{array}$	$\begin{array}{r} 40 \\ + 9 \\ \hline 49 \end{array}$	$\begin{array}{r} 51 \\ + 2 \\ \hline 53 \end{array}$	$\begin{array}{r} 83 \\ + 5 \\ \hline 88 \end{array}$	$\begin{array}{r} 53 \\ + 2 \\ \hline 55 \end{array}$



222 (two hundred twenty-two) Practice, adding tens and ones

EXTRA PRACTICE

Tell the child to add.

1.	$\begin{array}{r} 16 \\ +42 \\ \hline 58 \end{array}$	$\begin{array}{r} 22 \\ +12 \\ \hline 34 \end{array}$	$\begin{array}{r} 64 \\ +11 \\ \hline 75 \end{array}$	$\begin{array}{r} 27 \\ +22 \\ \hline 49 \end{array}$	$\begin{array}{r} 17 \\ +82 \\ \hline 99 \end{array}$
2.	$\begin{array}{r} 48 \\ +31 \\ \hline 79 \end{array}$	$\begin{array}{r} 62 \\ +10 \\ \hline 72 \end{array}$	$\begin{array}{r} 25 \\ +32 \\ \hline 57 \end{array}$	$\begin{array}{r} 20 \\ +18 \\ \hline 38 \end{array}$	$\begin{array}{r} 41 \\ +17 \\ \hline 58 \end{array}$
3.	$\begin{array}{r} 30 \\ +62 \\ \hline 92 \end{array}$	$\begin{array}{r} 44 \\ +33 \\ \hline 77 \end{array}$	$\begin{array}{r} 65 \\ +20 \\ \hline 85 \end{array}$	$\begin{array}{r} 18 \\ +71 \\ \hline 89 \end{array}$	$\begin{array}{r} 45 \\ +20 \\ \hline 65 \end{array}$
4.	$\begin{array}{r} 21 \\ +42 \\ \hline 63 \end{array}$	$\begin{array}{r} 34 \\ +61 \\ \hline 95 \end{array}$	$\begin{array}{r} 86 \\ +11 \\ \hline 97 \end{array}$	$\begin{array}{r} 51 \\ +40 \\ \hline 91 \end{array}$	$\begin{array}{r} 22 \\ +31 \\ \hline 53 \end{array}$
5.	$\begin{array}{r} 17 \\ +32 \\ \hline 49 \end{array}$	$\begin{array}{r} 57 \\ +21 \\ \hline 78 \end{array}$	$\begin{array}{r} 56 \\ +33 \\ \hline 89 \end{array}$	$\begin{array}{r} 67 \\ +11 \\ \hline 78 \end{array}$	$\begin{array}{r} 24 \\ +15 \\ \hline 39 \end{array}$
6.	$\begin{array}{r} 26 \\ +31 \\ \hline 57 \end{array}$	$\begin{array}{r} 86 \\ +12 \\ \hline 98 \end{array}$	$\begin{array}{r} 74 \\ +25 \\ \hline 99 \end{array}$	$\begin{array}{r} 82 \\ +11 \\ \hline 93 \end{array}$	$\begin{array}{r} 67 \\ +21 \\ \hline 88 \end{array}$
7.	$\begin{array}{r} 49 \\ +10 \\ \hline 59 \end{array}$	$\begin{array}{r} 61 \\ +33 \\ \hline 94 \end{array}$	$\begin{array}{r} 24 \\ +62 \\ \hline 86 \end{array}$	$\begin{array}{r} 11 \\ +12 \\ \hline 23 \end{array}$	$\begin{array}{r} 32 \\ +17 \\ \hline 49 \end{array}$
8.	$\begin{array}{r} 52 \\ +12 \\ \hline 64 \end{array}$	$\begin{array}{r} 73 \\ +26 \\ \hline 99 \end{array}$	$\begin{array}{r} 15 \\ +34 \\ \hline 49 \end{array}$	$\begin{array}{r} 51 \\ +16 \\ \hline 67 \end{array}$	$\begin{array}{r} 81 \\ +12 \\ \hline 93 \end{array}$
9.	$\begin{array}{r} 73 \\ +15 \\ \hline 88 \end{array}$	$\begin{array}{r} 43 \\ +22 \\ \hline 65 \end{array}$	$\begin{array}{r} 64 \\ +20 \\ \hline 84 \end{array}$	$\begin{array}{r} 22 \\ +15 \\ \hline 37 \end{array}$	$\begin{array}{r} 41 \\ +52 \\ \hline 93 \end{array}$
10.	$\begin{array}{r} 61 \\ +30 \\ \hline 91 \end{array}$	$\begin{array}{r} 43 \\ +11 \\ \hline 54 \end{array}$	$\begin{array}{r} 12 \\ +14 \\ \hline 26 \end{array}$	$\begin{array}{r} 18 \\ +41 \\ \hline 59 \end{array}$	$\begin{array}{r} 16 \\ +32 \\ \hline 48 \end{array}$

Using the Book Panels 1-6: Tell the child to add.

OBJECTIVE

To add tens and ones

PACING

- Level A 271 All (1-2 guided)
272 All
- Level B 271 All (1-2 guided)
272 All
- Level C 271 All (1 guided)
272 All

MATERIALS

9 full ten-boxes, 9 blocks

SUGGESTIONS

Initial Activity Display a set of 2 full ten-boxes and 5 blocks and another set of 3 blocks. Have the child tell the number of blocks in each set. Ask, "How many blocks in all?" Write and relate the addition situation on the chalkboard.

2 tens + 5 → 25
3 → + 3
2 tens + 8 → 28

ACTIVITIES

- 1. Give the child several short form exercises. Time the child while solving each one. The object is to beat the time on the previous one.
- 2. Use the Number Chart described in the Activity Reservoir. Give the child several additions. Have the child check the work by locating the two-digit numerals, then counting on by tens and ones.
- 3. Play Bingo as described in the Activity Reservoir. Use the short form.

1.

Adding

Add.

tens	ones
2	4
3	2
5	6

24

+ 32

56

2.

58

72

15

27

68

63

+ 31

+ 21

+ 82

+ 62

+ 11

+ 24

89

93

97

89

79

87

3.

81

52

65

37

72

38

+ 17

+ 13

+ 33

+ 61

+ 14

+ 10

98

65

98

98

86

48

4.

21

40

36

59

53

60

+ 27

+ 34

+ 62

+ 40

+ 33

+ 33

48

74

98

99

86

93

5.

56

32

22

81

70

44

+ 21

+ 67

+ 35

+ 18

+ 29

+ 15

77

99

57

99

99

59

6.

89

63

46

50

45

17

+ 10

+ 25

+ 13

+ 48

+ 34

+ 62

99

88

59

98

79

79

7.

54

37

23

83

60

47

+ 13

+ 21

+ 74

+ 14

+ 29

+ 31

67

58

97

97

89

78

Adding ones to tens and ones, no regrouping

(two hundred twenty-three)

223

Using the Book Panel 1: Elicit there are 2 yellow ten-boxes and 3 yellow blocks on top and 4 blue blocks below. Relate the expanded form to this. Ask the child to trace the ring to join the loose blocks. Ask, "What is 3 plus 4? (7)" Have the child trace the 7. "How many tens? (2)" Have the child trace the 2. Read the sum, "2 tens plus 7." Relate the short form to the expanded form. Ask, "How many ones in the sum? Trace the 7." "How many tens? Trace the 2." Point out that the 2 is written in the tens place and 27 is the short name for 2 tens + 7.

Panels 2-7: Tell the child to add. Remind the child to add the ones and bring down the number in the tens place.

1. $\begin{array}{r} 85 \\ + 13 \\ \hline 98 \end{array}$ $\begin{array}{r} 43 \\ + 26 \\ \hline 69 \end{array}$ $\begin{array}{r} 78 \\ + 10 \\ \hline 88 \end{array}$ $\begin{array}{r} 61 \\ + 32 \\ \hline 93 \end{array}$ $\begin{array}{r} 55 \\ + 44 \\ \hline 99 \end{array}$ $\begin{array}{r} 87 \\ + 12 \\ \hline 99 \end{array}$
2. $\begin{array}{r} 33 \\ + 26 \\ \hline 59 \end{array}$ $\begin{array}{r} 21 \\ + 48 \\ \hline 69 \end{array}$ $\begin{array}{r} 40 \\ + 36 \\ \hline 76 \end{array}$ $\begin{array}{r} 75 \\ + 13 \\ \hline 88 \end{array}$ $\begin{array}{r} 51 \\ + 28 \\ \hline 79 \end{array}$ $\begin{array}{r} 72 \\ + 26 \\ \hline 98 \end{array}$
3. $\begin{array}{r} 45 \\ + 30 \\ \hline 75 \end{array}$ $\begin{array}{r} 18 \\ + 71 \\ \hline 89 \end{array}$ $\begin{array}{r} 60 \\ + 39 \\ \hline 99 \end{array}$ $\begin{array}{r} 27 \\ + 41 \\ \hline 68 \end{array}$ $\begin{array}{r} 53 \\ + 30 \\ \hline 83 \end{array}$ $\begin{array}{r} 86 \\ + 11 \\ \hline 97 \end{array}$
4. $\begin{array}{r} 25 \\ + 31 \\ \hline 56 \end{array}$ $\begin{array}{r} 83 \\ + 10 \\ \hline 93 \end{array}$ $\begin{array}{r} 23 \\ + 76 \\ \hline 99 \end{array}$ $\begin{array}{r} 20 \\ + 19 \\ \hline 39 \end{array}$ $\begin{array}{r} 36 \\ + 42 \\ \hline 78 \end{array}$ $\begin{array}{r} 65 \\ + 20 \\ \hline 85 \end{array}$
5. $\begin{array}{r} 70 \\ + 26 \\ \hline 96 \end{array}$ $\begin{array}{r} 62 \\ + 24 \\ \hline 86 \end{array}$ $\begin{array}{r} 40 \\ + 17 \\ \hline 57 \end{array}$ $\begin{array}{r} 56 \\ + 33 \\ \hline 89 \end{array}$ $\begin{array}{r} 73 \\ + 16 \\ \hline 89 \end{array}$ $\begin{array}{r} 85 \\ + 14 \\ \hline 99 \end{array}$
6. $\begin{array}{r} 28 \\ + 40 \\ \hline 68 \end{array}$ $\begin{array}{r} 33 \\ + 62 \\ \hline 95 \end{array}$ $\begin{array}{r} 10 \\ + 81 \\ \hline 91 \end{array}$ $\begin{array}{r} 16 \\ + 31 \\ \hline 47 \end{array}$ $\begin{array}{r} 17 \\ + 82 \\ \hline 99 \end{array}$ $\begin{array}{r} 35 \\ + 20 \\ \hline 55 \end{array}$



224 (two hundred twenty-four) Practice adding ones to tens and ones

Using the Book Panels 1-6: Tell the child to add. Remind the child to add the ones and bring down the number in the tens place.

EXTRA PRACTICE

Tell the child to add.

1. $\begin{array}{r} 16 \\ + 3 \\ \hline 19 \end{array}$ $\begin{array}{r} 40 \\ + 2 \\ \hline 42 \end{array}$ $\begin{array}{r} 18 \\ + 1 \\ \hline 19 \end{array}$ $\begin{array}{r} 27 \\ + 2 \\ \hline 29 \end{array}$ $\begin{array}{r} 41 \\ + 8 \\ \hline 49 \end{array}$
2. $\begin{array}{r} 63 \\ + 4 \\ \hline 67 \end{array}$ $\begin{array}{r} 52 \\ + 5 \\ \hline 57 \end{array}$ $\begin{array}{r} 44 \\ + 3 \\ \hline 47 \end{array}$ $\begin{array}{r} 82 \\ + 6 \\ \hline 88 \end{array}$ $\begin{array}{r} 91 \\ + 7 \\ \hline 98 \end{array}$
3. $\begin{array}{r} 27 \\ + 2 \\ \hline 29 \end{array}$ $\begin{array}{r} 63 \\ + 5 \\ \hline 68 \end{array}$ $\begin{array}{r} 51 \\ + 8 \\ \hline 59 \end{array}$ $\begin{array}{r} 33 \\ + 3 \\ \hline 36 \end{array}$ $\begin{array}{r} 34 \\ + 5 \\ \hline 39 \end{array}$
4. $\begin{array}{r} 63 \\ + 3 \\ \hline 66 \end{array}$ $\begin{array}{r} 92 \\ + 7 \\ \hline 99 \end{array}$ $\begin{array}{r} 81 \\ + 3 \\ \hline 84 \end{array}$ $\begin{array}{r} 63 \\ + 5 \\ \hline 68 \end{array}$ $\begin{array}{r} 61 \\ + 8 \\ \hline 69 \end{array}$
5. $\begin{array}{r} 72 \\ + 2 \\ \hline 74 \end{array}$ $\begin{array}{r} 60 \\ + 1 \\ \hline 61 \end{array}$ $\begin{array}{r} 73 \\ + 6 \\ \hline 79 \end{array}$ $\begin{array}{r} 12 \\ + 7 \\ \hline 19 \end{array}$ $\begin{array}{r} 13 \\ + 3 \\ \hline 16 \end{array}$
6. $\begin{array}{r} 12 \\ + 6 \\ \hline 18 \end{array}$ $\begin{array}{r} 25 \\ + 3 \\ \hline 28 \end{array}$ $\begin{array}{r} 42 \\ + 6 \\ \hline 48 \end{array}$ $\begin{array}{r} 31 \\ + 2 \\ \hline 33 \end{array}$ $\begin{array}{r} 54 \\ + 2 \\ \hline 56 \end{array}$
7. $\begin{array}{r} 61 \\ + 5 \\ \hline 66 \end{array}$ $\begin{array}{r} 70 \\ + 8 \\ \hline 78 \end{array}$ $\begin{array}{r} 28 \\ + 1 \\ \hline 29 \end{array}$ $\begin{array}{r} 32 \\ + 3 \\ \hline 35 \end{array}$ $\begin{array}{r} 18 \\ + 1 \\ \hline 19 \end{array}$
8. $\begin{array}{r} 26 \\ + 2 \\ \hline 28 \end{array}$ $\begin{array}{r} 63 \\ + 2 \\ \hline 65 \end{array}$ $\begin{array}{r} 20 \\ + 4 \\ \hline 24 \end{array}$ $\begin{array}{r} 81 \\ + 8 \\ \hline 89 \end{array}$ $\begin{array}{r} 92 \\ + 6 \\ \hline 98 \end{array}$
9. $\begin{array}{r} 21 \\ + 3 \\ \hline 24 \end{array}$ $\begin{array}{r} 42 \\ + 7 \\ \hline 49 \end{array}$ $\begin{array}{r} 21 \\ + 8 \\ \hline 29 \end{array}$ $\begin{array}{r} 14 \\ + 4 \\ \hline 18 \end{array}$ $\begin{array}{r} 38 \\ + 1 \\ \hline 39 \end{array}$
10. $\begin{array}{r} 40 \\ + 3 \\ \hline 43 \end{array}$ $\begin{array}{r} 16 \\ + 3 \\ \hline 19 \end{array}$ $\begin{array}{r} 34 \\ + 5 \\ \hline 39 \end{array}$ $\begin{array}{r} 22 \\ + 2 \\ \hline 24 \end{array}$ $\begin{array}{r} 60 \\ + 5 \\ \hline 65 \end{array}$

OBJECTIVE

To subtract tens

PACING

Level A All (1-2 guided)
Level B All (1-2 guided)
Level C All (1 guided)

MATERIALS

9 full ten-boxes

SUGGESTIONS

Initial Activity Display 7 full ten-boxes. Have the child tell the number of boxes in all and write 7 tens on the chalkboard. Ask the child how many blocks in all and write 70 on the chalkboard. Remove 3 full ten-boxes and write -3 tens under 7 tens and -30 under 70. Ask, "How many ten-boxes are left?" Write 4 tens under 7 tens. Ask, "How many blocks are left?" Write 40 under 70. Have the child draw lines to connect 7 tens and 70, 3 tens and 30, 4 tens and 40.

7 tens \longrightarrow 70
3 tens \longrightarrow -30
4 tens \longrightarrow 40

ACTIVITIES

1. Provide various examples, subtracting tens, on a duplicating master or the chalkboard. Play Stop the Magician as described in the Activity Reservoir.

2. Play Matching the Sum as described in the Activity Reservoir. Use the short form.

3. Show examples of subtracting tens. Have the child use dimes to demonstrate the examples. Then have the child find the differences.

EXTRA PRACTICE

Practice Exercises p254 (bottom)

Subtracting

1.



Subtract.

3 tens
2 tens

1 ten

30
- 20
10

2.



Subtract.

4 tens
2 tens

2 tens

40
- 20
20

3.

Subtract.

6 tens
2 tens

4 tens

60
- 20
40

4.

Subtract.

8 tens
7 tens

1 ten

80
- 70
10

5.

50
- 30
20

90
- 20
70

80
- 40
40

90
- 10
80

70
- 20
50

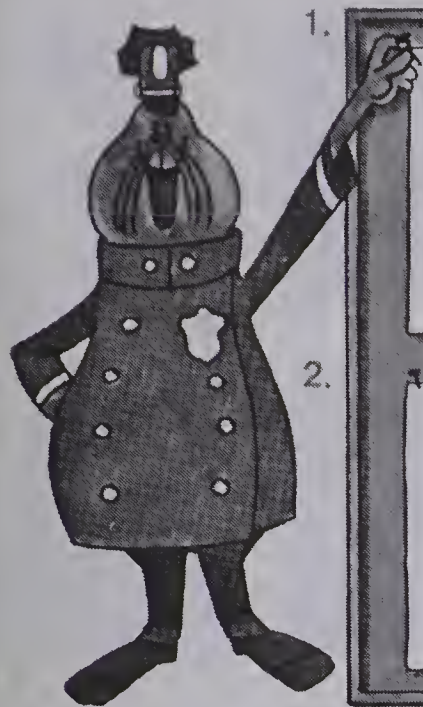
Subtracting tens, no regrouping (two hundred twenty-five) 225

Using the Book Panel 1: Ask, "How many ten-boxes in all? (3) How many have an X on them? (2) How many are left? (1)" Say, "Look where it says 'subtract.' 3 tens minus 2 tens is how many? (1 ten)" Have the child trace the 1 and say 1 ten. Point out that 30 is another name for 3 tens and 20 is another name for 2 tens. Ask, "30 minus 20 is what? (10)" Have the child trace the 10. Say that 10 is the short name for 1 ten.

Panel 2: Relate 4 tens in all and 2 tens to be subtracted to the picture. Ask, "4 tens minus 2 tens is how many tens?" Have the child write 2. Direct attention to 40 minus 20. Have the child write 20. You may have the child draw a line from 2 tens to 20, pointing out that these are two names for the same number.

Panels 3-4: Direct the child to subtract the tens and then subtract the same numbers written in short form. To check, ask the child to draw a line between the differences. These should be two names for the same number.

Panel 5: Have the child find the differences.



1.

$\begin{array}{r} 30 \\ - 20 \\ \hline 10 \end{array}$	$\begin{array}{r} 50 \\ - 40 \\ \hline 10 \end{array}$	$\begin{array}{r} 70 \\ - 20 \\ \hline 50 \end{array}$
$\begin{array}{r} 90 \\ - 40 \\ \hline 50 \end{array}$	$\begin{array}{r} 80 \\ - 50 \\ \hline 30 \end{array}$	$\begin{array}{r} 20 \\ - 10 \\ \hline 10 \end{array}$

2.

- 3.
- | | | | | | |
|--|--|--|--|--|--|
| $\begin{array}{r} 80 \\ - 20 \\ \hline 60 \end{array}$ | $\begin{array}{r} 40 \\ - 30 \\ \hline 10 \end{array}$ | $\begin{array}{r} 70 \\ - 10 \\ \hline 60 \end{array}$ | $\begin{array}{r} 90 \\ - 70 \\ \hline 20 \end{array}$ | $\begin{array}{r} 50 \\ - 20 \\ \hline 30 \end{array}$ | $\begin{array}{r} 60 \\ - 30 \\ \hline 30 \end{array}$ |
|--|--|--|--|--|--|
- 4.
- | | | | | | |
|--|--|--|--|--|--|
| $\begin{array}{r} 90 \\ - 30 \\ \hline 60 \end{array}$ | $\begin{array}{r} 60 \\ - 40 \\ \hline 20 \end{array}$ | $\begin{array}{r} 80 \\ - 60 \\ \hline 20 \end{array}$ | $\begin{array}{r} 40 \\ - 10 \\ \hline 30 \end{array}$ | $\begin{array}{r} 70 \\ - 60 \\ \hline 10 \end{array}$ | $\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$ |
|--|--|--|--|--|--|
- 5.
- | | | | | | |
|--|--|--|--|--|--|
| $\begin{array}{r} 70 \\ - 30 \\ \hline 40 \end{array}$ | $\begin{array}{r} 90 \\ - 80 \\ \hline 10 \end{array}$ | $\begin{array}{r} 70 \\ - 40 \\ \hline 30 \end{array}$ | $\begin{array}{r} 80 \\ - 10 \\ \hline 70 \end{array}$ | $\begin{array}{r} 60 \\ - 20 \\ \hline 40 \end{array}$ | $\begin{array}{r} 40 \\ - 20 \\ \hline 20 \end{array}$ |
|--|--|--|--|--|--|
- 6.
- | | | | | | |
|--|--|--|--|--|--|
| $\begin{array}{r} 60 \\ - 10 \\ \hline 50 \end{array}$ | $\begin{array}{r} 50 \\ - 30 \\ \hline 20 \end{array}$ | $\begin{array}{r} 80 \\ - 40 \\ \hline 40 \end{array}$ | $\begin{array}{r} 90 \\ - 50 \\ \hline 40 \end{array}$ | $\begin{array}{r} 60 \\ - 50 \\ \hline 10 \end{array}$ | $\begin{array}{r} 90 \\ - 50 \\ \hline 40 \end{array}$ |
|--|--|--|--|--|--|

226 (two hundred twenty-six) Practice subtracting tens

EXTRA PRACTICE

Tell the child to subtract.

- 1.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 90 \\ - 50 \\ \hline 40 \end{array}$ | $\begin{array}{r} 30 \\ - 20 \\ \hline 10 \end{array}$ | $\begin{array}{r} 70 \\ - 20 \\ \hline 50 \end{array}$ | $\begin{array}{r} 20 \\ - 10 \\ \hline 10 \end{array}$ | $\begin{array}{r} 50 \\ - 20 \\ \hline 30 \end{array}$ |
|--|--|--|--|--|
- 2.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 70 \\ - 40 \\ \hline 30 \end{array}$ | $\begin{array}{r} 60 \\ - 50 \\ \hline 10 \end{array}$ | $\begin{array}{r} 90 \\ - 30 \\ \hline 60 \end{array}$ | $\begin{array}{r} 40 \\ - 10 \\ \hline 30 \end{array}$ | $\begin{array}{r} 40 \\ - 20 \\ \hline 20 \end{array}$ |
|--|--|--|--|--|
- 3.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 80 \\ - 30 \\ \hline 50 \end{array}$ | $\begin{array}{r} 50 \\ - 40 \\ \hline 10 \end{array}$ | $\begin{array}{r} 70 \\ - 30 \\ \hline 40 \end{array}$ | $\begin{array}{r} 90 \\ - 20 \\ \hline 70 \end{array}$ | $\begin{array}{r} 80 \\ - 30 \\ \hline 50 \end{array}$ |
|--|--|--|--|--|
- 4.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 20 \\ - 10 \\ \hline 10 \end{array}$ | $\begin{array}{r} 70 \\ - 20 \\ \hline 50 \end{array}$ | $\begin{array}{r} 60 \\ - 40 \\ \hline 20 \end{array}$ | $\begin{array}{r} 90 \\ - 70 \\ \hline 20 \end{array}$ | $\begin{array}{r} 80 \\ - 10 \\ \hline 70 \end{array}$ |
|--|--|--|--|--|
- 5.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$ | $\begin{array}{r} 40 \\ - 30 \\ \hline 10 \end{array}$ | $\begin{array}{r} 50 \\ - 30 \\ \hline 20 \end{array}$ | $\begin{array}{r} 50 \\ - 40 \\ \hline 10 \end{array}$ | $\begin{array}{r} 50 \\ - 20 \\ \hline 30 \end{array}$ |
|--|--|--|--|--|
- 6.
- | | | | | |
|--|--|--|--|--|
| $\begin{array}{r} 80 \\ - 10 \\ \hline 70 \end{array}$ | $\begin{array}{r} 60 \\ - 40 \\ \hline 20 \end{array}$ | $\begin{array}{r} 50 \\ - 10 \\ \hline 40 \end{array}$ | $\begin{array}{r} 90 \\ - 60 \\ \hline 30 \end{array}$ | $\begin{array}{r} 80 \\ - 20 \\ \hline 60 \end{array}$ |
|--|--|--|--|--|

Using the Book Panels 1-2: You may want to call attention to Flub Blub dressed as a police officer and some papers pinned to the bulletin board. Tell the child to find each difference.

Panels 3-6: Tell the child to subtract.

OBJECTIVE

To subtract tens and ones

PACING

- Level A 227 All (1-2 guided)
228 All
- Level B 227 All (1-2 guided)
228 All
- Level C 227 All (1 guided)
228 All

MATERIALS

9 full ten-boxes, 9 blocks

BACKGROUND

See Item 2 of the Chapter Overview Background.

SUGGESTIONS

Initial Activity Create an illustration similar to the Initial Activity on page 225. Use the vertical example 38-13.

ACTIVITIES

1. Use the short form to play Queen's Plate as described in the Activity Reservoir.
2. Have the child use dimes and pennies to illustrate subtractions such as 46 - 24.
3. At each end of the chalkboard write identical short form exercises. Place A over one set and B over the other. Form 2 teams, A and B. At a signal the first player of each team goes to that team's exercises, solves the first one, returns to the end of the line, then the next player, and so on. The first team to finish, with correct answers, wins.
4. See Bulletin Board suggestion 3 in the Chapter Overview.

Subtracting

1.



Subtract.

tens	ones	
3	7	37
1	3	- 13
2	4	24

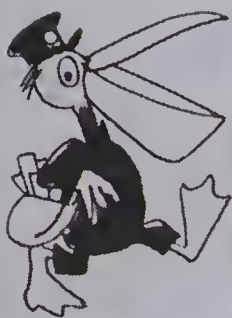
2.	$\begin{array}{r} 96 \\ - 82 \\ \hline 14 \end{array}$	$\begin{array}{r} 87 \\ - 34 \\ \hline 53 \end{array}$	$\begin{array}{r} 73 \\ - 10 \\ \hline 63 \end{array}$	$\begin{array}{r} 58 \\ - 30 \\ \hline 28 \end{array}$	$\begin{array}{r} 64 \\ - 24 \\ \hline 40 \end{array}$	$\begin{array}{r} 89 \\ - 52 \\ \hline 37 \end{array}$
3.	$\begin{array}{r} 81 \\ - 20 \\ \hline 61 \end{array}$	$\begin{array}{r} 53 \\ - 42 \\ \hline 11 \end{array}$	$\begin{array}{r} 77 \\ - 11 \\ \hline 66 \end{array}$	$\begin{array}{r} 99 \\ - 82 \\ \hline 17 \end{array}$	$\begin{array}{r} 37 \\ - 20 \\ \hline 17 \end{array}$	$\begin{array}{r} 88 \\ - 48 \\ \hline 40 \end{array}$
4.	$\begin{array}{r} 68 \\ - 43 \\ \hline 25 \end{array}$	$\begin{array}{r} 86 \\ - 70 \\ \hline 16 \end{array}$	$\begin{array}{r} 58 \\ - 38 \\ \hline 20 \end{array}$	$\begin{array}{r} 65 \\ - 20 \\ \hline 45 \end{array}$	$\begin{array}{r} 96 \\ - 23 \\ \hline 73 \end{array}$	$\begin{array}{r} 79 \\ - 45 \\ \hline 34 \end{array}$
5.	$\begin{array}{r} 98 \\ - 62 \\ \hline 36 \end{array}$	$\begin{array}{r} 58 \\ - 24 \\ \hline 34 \end{array}$	$\begin{array}{r} 98 \\ - 68 \\ \hline 30 \end{array}$	$\begin{array}{r} 79 \\ - 61 \\ \hline 18 \end{array}$	$\begin{array}{r} 85 \\ - 25 \\ \hline 60 \end{array}$	$\begin{array}{r} 79 \\ - 45 \\ \hline 34 \end{array}$
6.	$\begin{array}{r} 63 \\ - 51 \\ \hline 12 \end{array}$	$\begin{array}{r} 78 \\ - 35 \\ \hline 43 \end{array}$	$\begin{array}{r} 69 \\ - 27 \\ \hline 42 \end{array}$	$\begin{array}{r} 84 \\ - 34 \\ \hline 50 \end{array}$	$\begin{array}{r} 89 \\ - 41 \\ \hline 48 \end{array}$	$\begin{array}{r} 98 \\ - 51 \\ \hline 47 \end{array}$
7.	$\begin{array}{r} 37 \\ - 22 \\ \hline 15 \end{array}$	$\begin{array}{r} 48 \\ - 16 \\ \hline 32 \end{array}$	$\begin{array}{r} 76 \\ - 10 \\ \hline 66 \end{array}$	$\begin{array}{r} 84 \\ - 13 \\ \hline 71 \end{array}$	$\begin{array}{r} 67 \\ - 23 \\ \hline 44 \end{array}$	$\begin{array}{r} 75 \\ - 12 \\ \hline 63 \end{array}$

Subtracting tens and ones no regrouping (two hundred twenty-seven) 227

Using the Book Panel 1: Ask, "How many ten-boxes and blocks in all? (3 tens + 7)" Relate the picture to the first line of the expanded form. Then ask, "How many ten-boxes and blocks have X's on them? (1 ten + 3)" Relate this to the second line in the expanded form. Remind the child that we subtract ones first and have the child trace the 4 in the answer. Then subtract tens and have the child trace the 2 in the answer. Have the child use the picture to verify the difference. Relate the short form to the expanded form and have the child trace the 24, ones first and then tens. Say, "2 tens plus 4 is the same as 24."

Panel 2: Have the child look at 96 - 82. Say, "Subtract the ones. Write 4. Subtract the tens. Write 1." Have the child read the difference, 14. Then have the child complete the panel.

Panels 3-7: Tell the child to subtract.



$$\begin{array}{r} 58 \\ - 28 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 73 \\ - 10 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 86 \\ - 25 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 93 \\ - 12 \\ \hline 81 \end{array}$$

$$\begin{array}{r} 85 \\ - 71 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 44 \\ - 24 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 67 \\ - 13 \\ \hline 54 \end{array}$$

$$\begin{array}{r} 83 \\ - 13 \\ \hline 70 \end{array}$$

$$\begin{array}{r} 76 \\ - 15 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 95 \\ - 10 \\ \hline 85 \end{array}$$

$$\begin{array}{r} 46 \\ - 13 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 69 \\ - 38 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 56 \\ - 42 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 87 \\ - 26 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 54 \\ - 34 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 99 \\ - 36 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 28 \\ - 10 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 75 \\ - 62 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 46 \\ - 24 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 83 \\ - 61 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 98 \\ - 50 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 47 \\ - 25 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 59 \\ - 19 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 64 \\ - 51 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 79 \\ - 47 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 88 \\ - 44 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 69 \\ - 55 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 32 \\ - 11 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 51 \\ - 41 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 37 \\ - 13 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 45 \\ - 34 \\ \hline 11 \end{array}$$

228 (two hundred twenty-eight) Practice subtracting tens and ones

Using the Book You may call attention to the stork collecting mail.

Panel 1: Remind the child to subtract ones first and then tens. Have the child look at the first vertical example $58 - 28$. Say, "Subtract the ones. (0) Subtract the tens (3)." Have the child complete the panel.

Panels 2-6: Have the child find the differences.

EXTRA PRACTICE

Tell the child to subtract.

$$\begin{array}{r} 53 \\ - 11 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 66 \\ - 10 \\ \hline 56 \end{array}$$

$$\begin{array}{r} 43 \\ - 12 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 65 \\ - 12 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 62 \\ - 11 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 74 \\ - 13 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 87 \\ - 23 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 64 \\ - 23 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 87 \\ - 33 \\ \hline 54 \end{array}$$

$$\begin{array}{r} 41 \\ - 10 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 68 \\ - 17 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 43 \\ - 12 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 61 \\ - 51 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 82 \\ - 11 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 64 \\ - 23 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 77 \\ - 22 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 86 \\ - 23 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 96 \\ - 21 \\ \hline 75 \end{array}$$

$$\begin{array}{r} 75 \\ - 22 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 73 \\ - 41 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 96 \\ - 25 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 79 \\ - 68 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 98 \\ - 41 \\ \hline 57 \end{array}$$

$$\begin{array}{r} 73 \\ - 51 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 86 \\ - 54 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 54 \\ - 23 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 39 \\ - 20 \\ \hline 19 \end{array}$$

$$\begin{array}{r} 67 \\ - 36 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 42 \\ - 20 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 79 \\ - 58 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 37 \\ - 15 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 89 \\ - 72 \\ \hline 17 \end{array}$$

$$\begin{array}{r} 75 \\ - 42 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 66 \\ - 33 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 54 \\ - 12 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 97 \\ - 26 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 94 \\ - 42 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 58 \\ - 27 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 55 \\ - 35 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 87 \\ - 76 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 33 \\ - 13 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 58 \\ - 33 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 69 \\ - 23 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 92 \\ - 81 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 67 \\ - 16 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 95 \\ - 84 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 98 \\ - 22 \\ \hline 76 \end{array}$$

$$\begin{array}{r} 47 \\ - 32 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 69 \\ - 34 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 76 \\ - 52 \\ \hline 24 \end{array}$$

OBJECTIVE

To subtract ones from tens and ones

PACING

- Level A 229 All (guided)
- Level B 229 All (1-2 guided)
- Level C 229 All (1 guided)

MATERIALS

9 full ten-boxes, 9 blocks

SUGGESTIONS

Initial Activity Use ten-boxes and blocks to create an illustration similar to the Initial Activity on page 225. Use the vertical example 28 - 3.

ACTIVITIES

1. Have the child use ten-boxes and blocks to demonstrate subtractions in vertical form. After calculating the answer, the child can check by counting the blocks.
2. Have the child use dimes and pennies to illustrate subtraction exercises you present. After calculating, the child can check the answer with the dimes and pennies.
3. Play Queen's Plate as described in the Activity Reservoir. Use short form exercises.

1. Subtracting



Subtract.

tens	ones
1	9
	5
1	4

$$\begin{array}{r} 19 \\ - 5 \\ \hline 14 \end{array}$$

2.	$\begin{array}{r} 48 \\ - 7 \\ \hline 41 \end{array}$	$\begin{array}{r} 66 \\ - 6 \\ \hline 60 \end{array}$	$\begin{array}{r} 56 \\ - 4 \\ \hline 52 \end{array}$	$\begin{array}{r} 78 \\ - 2 \\ \hline 76 \end{array}$	$\begin{array}{r} 95 \\ - 5 \\ \hline 90 \end{array}$	$\begin{array}{r} 89 \\ - 4 \\ \hline 85 \end{array}$
3.	$\begin{array}{r} 67 \\ - 6 \\ \hline 61 \end{array}$	$\begin{array}{r} 87 \\ - 7 \\ \hline 80 \end{array}$	$\begin{array}{r} 79 \\ - 2 \\ \hline 77 \end{array}$	$\begin{array}{r} 17 \\ - 5 \\ \hline 12 \end{array}$	$\begin{array}{r} 46 \\ - 5 \\ \hline 41 \end{array}$	$\begin{array}{r} 69 \\ - 3 \\ \hline 66 \end{array}$
4.	$\begin{array}{r} 97 \\ - 4 \\ \hline 93 \end{array}$	$\begin{array}{r} 29 \\ - 6 \\ \hline 23 \end{array}$	$\begin{array}{r} 58 \\ - 4 \\ \hline 54 \end{array}$	$\begin{array}{r} 59 \\ - 1 \\ \hline 58 \end{array}$	$\begin{array}{r} 19 \\ - 9 \\ \hline 10 \end{array}$	$\begin{array}{r} 98 \\ - 2 \\ \hline 96 \end{array}$
5.	$\begin{array}{r} 86 \\ - 3 \\ \hline 83 \end{array}$	$\begin{array}{r} 34 \\ - 3 \\ \hline 31 \end{array}$	$\begin{array}{r} 73 \\ - 2 \\ \hline 71 \end{array}$	$\begin{array}{r} 87 \\ - 2 \\ \hline 85 \end{array}$	$\begin{array}{r} 64 \\ - 1 \\ \hline 63 \end{array}$	$\begin{array}{r} 48 \\ - 1 \\ \hline 47 \end{array}$
6.	$\begin{array}{r} 35 \\ - 1 \\ \hline 34 \end{array}$	$\begin{array}{r} 68 \\ - 5 \\ \hline 63 \end{array}$	$\begin{array}{r} 59 \\ - 8 \\ \hline 51 \end{array}$	$\begin{array}{r} 65 \\ - 4 \\ \hline 61 \end{array}$	$\begin{array}{r} 94 \\ - 4 \\ \hline 90 \end{array}$	$\begin{array}{r} 37 \\ - 3 \\ \hline 34 \end{array}$
7.	$\begin{array}{r} 49 \\ - 5 \\ \hline 44 \end{array}$	$\begin{array}{r} 58 \\ - 6 \\ \hline 52 \end{array}$	$\begin{array}{r} 96 \\ - 4 \\ \hline 92 \end{array}$	$\begin{array}{r} 13 \\ - 1 \\ \hline 12 \end{array}$	$\begin{array}{r} 25 \\ - 3 \\ \hline 22 \end{array}$	$\begin{array}{r} 39 \\ - 7 \\ \hline 32 \end{array}$

Subtracting ones from tens and ones no regrouping (two hundred twenty-nine) 229

Using the Book Panel 1: Elicit there is 1 ten-box and 9 blocks in all. Relate 1 ten + 9. Ask, "How many blocks have an X on them?" Relate subtract 5. Ask, "What is 9 minus 5? (4)" Have the child trace the 4. "How many tens? (1)" Have the child trace the 1. Read the difference, "1 ten + 4." Relate the short form to the expanded form. Ask, "How many ones in the difference?" Have the child trace the 4. "How many tens?" Have the child trace the 1. Point out that 1 is written in the tens place and 14 is the short name for 1 ten + 4.

Panel 2: Have the child look at 48 - 7. Say, "Subtract the ones. Eight minus 7 is what? (1)" Write 1. "How many tens?" Write 4. Have the child read the difference, 41 and complete the panel.

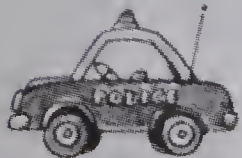
Panels 3-7: Tell the child to subtract. Remind the child to subtract the ones and bring down the number in the tens place.



police officers



badges



police car

1.	30 police officers at work. 20 more come to work. How many in all?	$\begin{array}{r} 30 \\ + 20 \\ \hline 50 \end{array}$
2.	30 badges. 10 were taken away. How many are left?	$\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$
3.	20 new police cars. 60 old police cars. How many in all?	$\begin{array}{r} 20 \\ + 60 \\ \hline 80 \end{array}$
4.	70 police officers at work. 20 go home. How many are left?	$\begin{array}{r} 70 \\ - 20 \\ \hline 50 \end{array}$

230 (two hundred thirty) Solving mini-problems

OBJECTIVES

To solve mini-problems
To add and subtract tens

PACING

Level A 230 All (1-2 guided)
Level B 230 All (1 guided)
Level C 230 All (1 guided)

MATERIALS

9 full ten-boxes

SUGGESTIONS

Initial Activity Write mini-problems on the chalkboard. Display the 9 full ten-boxes. Assist the child in reading and dramatizing each mini-problem using the blocks. Have the child write the addition or subtraction that fits the situation and solve it.

Police officer is the career for this chapter. Have children name everything they think a police officer does. Ask if any children have gone to a police officer when they needed help. Mention that police officers are community helpers. (Post office workers and firefighters will be seen later in this chapter.)

In discussing the consumer aspects of this page, include all community workers funded by taxes (police, fire, postal, sanitation, political officials, etc.).

Point out that their parents pay taxes and these taxes pay for salaries, upkeep of city buildings, roads, etc.

Using the Book Read the title and encourage the child to tell about the Police Officers picture. See Career Awareness in the Chapter Overview. Then have the child look at the pictures and words on the left.

Panel 1: Read the problem. Point out the words "police officers" again on the left. Remind the child that we add to find how many in all. Read, "30 plus 20." Have the child trace the example and then the sum.

Panel 2: If necessary, assist the child in reading this problem. Explain that the child can read the word "badges" by finding this word under the picture on the left. Ask, "Do we add or subtract to find how many are left? (subtract)" Direct the child in writing the vertical form in the box on the right. Have the child find the difference.

Panels 3-4: Have the child read each problem and show the work in the box on the right.

OBJECTIVES

To complete addition sentences for sum 11
 To add, sums 11 or less, in vertical form

PACING

- Level A 231 All (1-4 guided)
 232 All
- Level B 231 All (1-2 guided)
 232 All
- Level C 231 All (1-2 guided)
 232 All

MATERIALS

11 blocks

SUGGESTIONS

Initial Activity Use blocks to demonstrate the addition $9 + 2$, as shown in panel 1 on page 231. Demonstrate other combinations for sum 11.

ACTIVITIES

- Have the child use Jigsaw Puzzle Cards for sum 11 as described in the Activity Reservoir.
- Include adding sum 11 to the Addition Table Booklet started on page 182.
- Have the child copy these addition facts on the next page of the Addition Book. See page 45.

$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$

- Have the child use the flannel board to illustrate adding sum 11. Provide various felt objects.
- Using blocks, have the child prepare a list of all pairs of addends whose sum is 11. Then have the child prepare a list of all sets of 3 addends whose sum is 11.

Eleven

1.
 $2 + 9 = \underline{\quad\quad}$

2.
 $5 + 6 = \underline{11}$

3.
 $7 + 4 = \underline{11}$

4.
 $8 + 3 = \underline{11}$

5. $\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$

6. $\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$ $\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$ $\begin{array}{r} 2 \\ +8 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$ $\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$

7. $\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$ $\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ +7 \\ \hline \end{array}$

8. $\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$ $\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ +0 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ +8 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$

Addition facts to 11 (two hundred thirty-one) 231

Using the Book Panel 1: Ask, "How many yellow blocks? (2) How many green blocks? (9) How many in all? (11)" Have the child complete the number sentence.

Panel 2: Follow a procedure similar to panel 1.


Panels 3-4: Have the children count the blocks and complete the number sentence.

Panel 5: Read $9 + 2$. Elicit the answer, 11, from the child and have the child trace the answer. Have the child complete the panel.

Panels 6-8: Tell the child to add.

MORE KEEPING FIT (Addition facts to 10. For more practice see Suggestions on p115, and p176.)
 Tell the child to add.

$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +1 \\ \hline \end{array}$
$\frac{10}{10}$	$\frac{10}{10}$	$\frac{9}{9}$	$\frac{8}{8}$	$\frac{10}{10}$	$\frac{10}{10}$	$\frac{9}{9}$	$\frac{10}{10}$	$\frac{8}{8}$	$\frac{10}{10}$

1.	$\begin{array}{r} 6 \\ + 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array}$
2.	$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ + 8 \\ \hline 11 \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$
3.	$\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$	$\begin{array}{r} 1 \\ + 7 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$		$\begin{array}{r} 6 \\ + 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$
4.	$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$	$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$		$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$
5.	$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ + 4 \\ \hline 11 \end{array}$		$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$
6.	$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$	$\begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ + 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ + 2 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ + 8 \\ \hline 11 \end{array}$
7.	$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array}$

232 (two hundred thirty—two) Practice; addition facts to 11

EXTRA PRACTICE

Practice Exercises p254 (top)

Tell the child to add.

1.	$\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$
2.	$\begin{array}{r} 9 \\ +1 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ +7 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ +7 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$
3.	$\begin{array}{r} 1 \\ +8 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ +7 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline 11 \end{array}$
4.	$\begin{array}{r} 2 \\ +8 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ +0 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline 10 \end{array}$
5.	$\begin{array}{r} 9 \\ +0 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ +1 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ +2 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline 11 \end{array}$
6.	$\begin{array}{r} 9 \\ +2 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline 11 \end{array}$
7.	$\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline 7 \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline 11 \end{array}$	$\begin{array}{r} 2 \\ +6 \\ \hline 8 \end{array}$
8.	$\begin{array}{r} 8 \\ +3 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ +9 \\ \hline 11 \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$

Using the Book Panels 1-7: Tell the child to add.

OBJECTIVES

To complete addition sentences for sum 12
To add, sums 12 or less, in vertical form

PACING

- Level A 233 All (1-4 guided)
234 All
- Level B 233 All (1-2 guided)
234 All
- Level C 233 All (1-2 guided)
234 All

MATERIALS

12 blocks

SUGGESTIONS

Initial Activity Use blocks to demonstrate the addition of 9 + 3 as shown in panel 2 on page 233. Demonstrate other combinations for sum 12.

ACTIVITIES

- Provide practice with addition facts for sum 12 using the vertical and horizontal Basic Fact Practice Cards as described in the Activity Reservoir. Place the addition practice cards for sums 10, 11, and 12 in a large container. Challenge the child to pick a card from the container and place it under the numeral card that shows the correct sum. The child might use blocks to dramatize each addition.
- Include adding sum 12 to the Addition Table Booklet started on page 182.

Twelve

1.

6 + 6 = 12

2.

9 + 3 = 12

3.

4 + 8 = 12

4.

7 + 5 = 12

5.

6

9

6

3

12

6.

3

7

8

5

11

7.

2

6

8

6

10

8.

8

4

3

9

11

4

7

5

10

10

7

5

2

10

10

8

4

3

12

11

9

3

4

11

12

5

7

6

12

11

3

9

7

12

10

1

5

1

5

10

5

7

7

12

12

Addition facts to 12 (two hundred thirty-three) 233


Using the Book Panel 1: Ask, “How many green blocks? (6) How many yellow blocks? (6) How many in all? (12)” Have the child complete the number sentence.

Panel 2: Follow a procedure similar to panel 1.

Panels 3-4: Have the child count the blocks and complete the number sentence.

Panels 5-8: Tell the child to add.

AT HOME Choose any 2 rows of exercises to read to the child. Have the child tell you the answers.

1.	$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ + 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline 12 \end{array}$	
2.	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ + 7 \\ \hline 12 \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$	
3.	$\begin{array}{r} 9 \\ + 1 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ + 2 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$	
4.	$\begin{array}{r} 9 \\ + 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ + 8 \\ \hline 12 \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$			$\begin{array}{r} 7 \\ + 5 \\ \hline 12 \end{array}$	
			$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$				
5.	$\begin{array}{r} 3 \\ + 8 \\ \hline 11 \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$			$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ + 4 \\ \hline 11 \end{array}$
6.	$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline 12 \end{array}$		
7.	$\begin{array}{r} 0 \\ + 8 \\ \hline 8 \end{array}$	$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ + 7 \\ \hline 12 \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$	

234 (two hundred thirty-four) Practice Addition facts to 12

1. Have the child copy these additions on the next page of the Addition Book. See page 45.

$\begin{array}{r} 9 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$
$\begin{array}{r} 3 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 7 \\ \hline \end{array}$	

2. Have the child play Matching the Sum as described in the Activity Reservoir. Use vertical cards for sums 11 and 12.

3. Have the child demonstrate with different colored blocks different combinations of 3 addends whose sum is 12. Have the child write each combination.

EXTRA PRACTICE

Tell the child to add.

1.	$\begin{array}{r} 2 \\ + 7 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ + 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$	$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$
2.	$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 7 \\ + 4 \\ \hline 11 \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline 12 \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$
3.	$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ + 5 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline 10 \end{array}$
4.	$\begin{array}{r} 5 \\ + 7 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ + 8 \\ \hline 12 \end{array}$	$\begin{array}{r} 3 \\ + 8 \\ \hline 11 \end{array}$	$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array}$

Using the Book Panels 1-7: Tell the child to add. You may then have the child copy pairs of related addition and check the same sums.

At Home After finishing the pupil page, the child may take it home and complete the At Home activity printed in blue at the bottom of the page.

OBJECTIVE

To find the difference when subtracting from eleven

PACING

- Level A 235 All (1-5 guided)
236 All (1 guided)
- Level B 235 All (1, 3, 4 guided)
236 All
- Level C 235 All (1, 3 guided)
236 All


MATERIALS

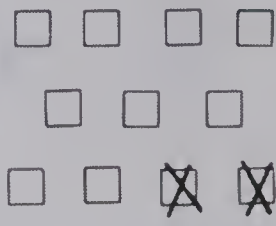
11 blocks


SUGGESTIONS


Initial Activity Set out eleven blocks and remove 3. Have the child write 11 - 3. Ask, "How many are left? (8)" Have the child write 8 to complete the sentence. Do another problem but have the child write the subtraction in vertical form. Have the child do this for several examples.

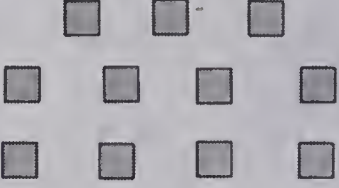
Subtracting from Eleven


1.
 $11 - 8 = 3$

2.
 $11 - 2 = 9$

3.
 $11 - 4 = 7$

4.
 $11 - 5 = 6$

5.
 $11 - 9 = 2$

6.
 $11 - 3 = 8$

7.

$\begin{array}{r} 11 \\ - 3 \\ \hline 8 \end{array}$

$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$

$\begin{array}{r} 11 \\ - 6 \\ \hline 5 \end{array}$

$\begin{array}{r} 11 \\ - 9 \\ \hline 2 \end{array}$

$\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$

$\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$

Subtracting from 11 (two hundred thirty-five) 235

Using the Book Panel 1: Ask, "How many blocks in all? (11) How many have X's on them? (8) How many are left? (3)" Then have the child complete the number sentence.

Panels 2-3: Have the child count the blocks, decide how many have X's on them, and complete the number sentence.

Panels 4-6: For each panel, have the child draw an X on the number of boxes being taken away and complete the number sentence.

Panel 7: Tell the child to subtract.

1.

11

3

11

4

9

11

- 5

+ 8

- 3

+ 7

+ 2

- 4

6

11

8

11

11

7

2.

11

10

5

8

11

6

- 6

- 8

+ 6

+ 3

- 8

+ 4

5

2

11

11

3

10

3.

10

7

11

11

8

7

- 3

+ 4

- 2

- 9

+ 2

+ 3

7

11

9

2

10

10

4.

10

11

6

10

2

6

- 5

- 7

+ 5

- 3

+ 9

+ 3

5

4

11

7

11

9

ACTIVITIES

1. Have the child play Bingo as described in the Activity Reservoir. Use the vertical form for subtracting from 10 and 11 in the cells. Your call will be the difference.

2. Have the child start Bulletin Board suggestion 2 in the Chapter Overview. Display only adding and subtracting with 11.

3. Have the child copy the following in the Subtraction Book. See page 56.

11 - 9 =

11 - 2 =

11 - 8 =

11 - 3 =

11 - 7 =

11 - 4 =

11 - 6 =

11 - 5 =

4. You may wish to reproduce this number puzzle for the child.

Activity

3	8	11
7	4	11
10	12	22

11	5	6
6	3	3
5	2	3

4	7	11
7	3	10
11	10	21

236 (two hundred thirty-six) Practice • Activity Number Puzzles

Using the Book panels 1-4: Tell the child to watch the sign to know whether to add or subtract.

Activity: To do these puzzles, the child adds or subtracts across and down. The number in the bottom right-hand corner should be the sum or difference of both the green boxes and the purple boxes. Tell the child to look at the card the man is holding to know whether to add or subtract.

1. 5	7		5. 6
		6. 4	
2. 7		6	8. 4
	3. 9		7. 5
4. 9		9. 6	10. 8

- Down

2. 10 - 3

4. 5 + 4

6. 4 tens + 6

8. 10 - 6

10. 3 + 5 + 0
- Across

1. 50 + 7

3. 4 + 4 + 1

5. 9 - 3

7. 10 - 5

9. 3 + 2 + 1

OBJECTIVE

To find the difference when subtracting from 12

PACING

- Level A 237 All (1-6 guided)
238 All (1 guided)
- Level B 237 All (1, 3, 4 guided)
238 All
- Level C 237 All (1, 3 guided)
238 All

SUGGESTIONS

Initial Activity Have 12 children stand in a line. Ask 3 to walk away. Elicit the idea that this is subtraction. Have the child write the subtraction and the answer vertically. Ask, "How many are left?" Do this several times, changing the number that leave. Be sure to have the child write the subtraction before asking the question.

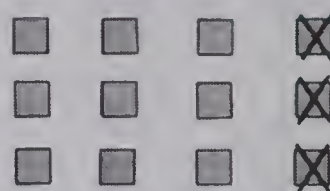
Subtracting from Twelve

1.



$$12 - 9 = \underline{3}$$

2.



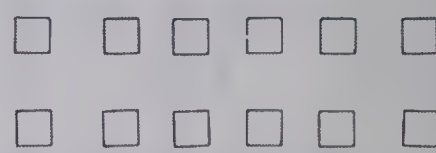
$$12 - 3 = \underline{9}$$

3.



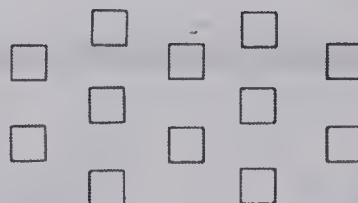
$$12 - 5 = \underline{7}$$

4.



$$12 - 8 = \underline{4}$$

5.



$$12 - 4 = \underline{8}$$

6.



$$12 - 6 = \underline{6}$$

7.

$\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 11 \\ - 6 \\ \hline 5 \end{array}$	$\begin{array}{r} 12 \\ - 7 \\ \hline 5 \end{array}$	$\begin{array}{r} 12 \\ - 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 12 \\ - 8 \\ \hline 4 \end{array}$
--	--	--	--	--	--

Subtracting from 12 (two hundred thirty-seven) 237

Using the Book Panel 1: Ask, "How many blocks in all? (12) How many have X's on them? (9) How many are left? (3)" Then have the child complete the number sentence.

Panels 2-3: Have the child count the blocks, decide how many have X's on them, and complete the number sentence.

Panels 4-6: For each panel have the child draw an X on the number of boxes being taken away and complete the number sentence.

Panel 7: Tell the child to subtract.

1.

$\begin{array}{r} 12 \\ - 6 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$	$\begin{array}{r} 12 \\ - 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 11 \\ - 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array}$
--	--	--	--	--	--

2.

$\begin{array}{r} 12 \\ - 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 11 \\ - 7 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ + 7 \\ \hline 12 \end{array}$	$\begin{array}{r} 7 \\ + 4 \\ \hline 11 \end{array}$	$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline 12 \end{array}$
--	--	--	--	--	--

3.

$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$	$\begin{array}{r} 12 \\ - 8 \\ \hline 4 \end{array}$	$\begin{array}{r} 11 \\ - 6 \\ \hline 5 \end{array}$	$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 7 \\ + 5 \\ \hline 12 \end{array}$
--	--	--	--	--	--

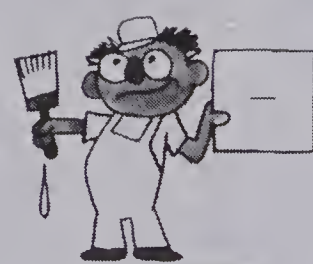
4.

$\begin{array}{r} 11 \\ - 5 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ + 8 \\ \hline 12 \end{array}$	$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$	$\begin{array}{r} 12 \\ - 7 \\ \hline 5 \end{array}$
--	--	--	--	--	--

Activity



4	8	12
7	4	11
11	12	23



12	3	9
6	0	6
6	3	3



3	9	12
8	2	10
11	11	22

238 (two hundred thirty-eight) Practice • Activity Number Puzzles

Using the Book Panels 1-4: Tell the child to watch the sign to know whether to add or subtract.

Activity: To do these puzzles, the child adds or subtracts across and down. The number in the bottom right-hand corner should be the sum or difference of both the green boxes and the purple boxes. Tell the child to look at the card the man is holding to know whether to add or subtract.

ACTIVITIES

1. The child may profit from a review of addition facts through sum 12, using the Dot Set Cards as described in the Activity Reservoir.

2. Complete Bulletin Board suggestion 2 in the Chapter Overview. Use addition and subtraction of 12.

3. Have the child copy the following in the Subtraction Book. See page 58.

$12 - 9 =$	$12 - 3 =$
$12 - 8 =$	$12 - 4 =$
$12 - 7 =$	$12 - 5 =$
$12 - 6 =$	

4. Prepare this puzzle. (Answers are included).

1. 1	2		4. 6	7
6			8	
	2. 8	9		5. 5
3. 7	9		6. 8	8
4			7	

Across Down

- | | |
|--|--|
| 1. $\begin{array}{r} 10 \\ + 2 \\ \hline \end{array}$ | 1. 1 ten + 6 |
| 2. $\begin{array}{r} 44 \\ + 45 \\ \hline \end{array}$ | 2. $\begin{array}{r} 36 \\ + 53 \\ \hline \end{array}$ |
| 3. $\begin{array}{r} 47 \\ + 32 \\ \hline \end{array}$ | 3. $70 + 4$ |
| 4. $\begin{array}{r} 54 \\ + 13 \\ \hline \end{array}$ | 4. $\begin{array}{r} 35 \\ + 33 \\ \hline \end{array}$ |
| 6. $80 + 8$ | 5. $\begin{array}{r} 30 \\ + 28 \\ \hline \end{array}$ |
| | 6. $\begin{array}{r} 62 \\ + 25 \\ \hline \end{array}$ |

You may make similar puzzles for sums 10-12 addition and subtraction.

OBJECTIVE

To find the missing numbers in sentences such as $3 + 3 + 3 = \underline{\quad}$ and three 3's = $\underline{\quad}$

PACING

Level A (Initial Activities only)
Level B (Initial Activities only)
Level C All (1-2 guided)

MATERIALS

18 blocks

BACKGROUND

See Item 4 of the Chapter Overview Background

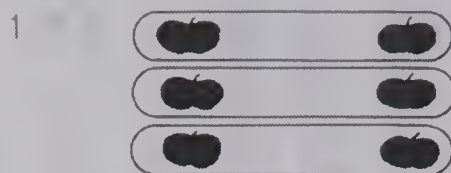
SUGGESTIONS

Initial Activity Have the child show three sets with 2 blocks in each. Relate $2 + 2 + 2 = \underline{\quad}$ to how many blocks there are in all. Ask, "How many times is two an addend?" Then ask, "Three twos is equal to what number?" Write three 2's = $\underline{\quad}$ below $2 + 2 + 2 = 6$. Develop these ideas: 3 tells how many sets there are, 2 tells how many members in each, and 6 tells how many in all. Repeat the above activity for $4 + 4 + 4 = \underline{\quad}$, three 4's = $\underline{\quad}$.

ACTIVITIES

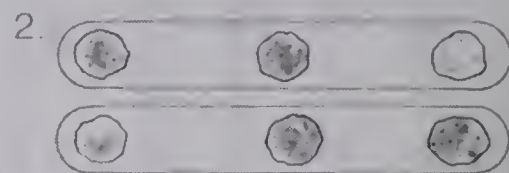
Provide the child with more multiplication readiness experiences similar to those on page 239. Have the child use objects on the flannel board to illustrate each experience.

How Many?



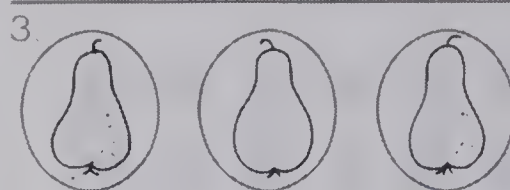
$$2 + 2 + 2 = \underline{6}$$

$$\text{three 2's} = \underline{6}$$



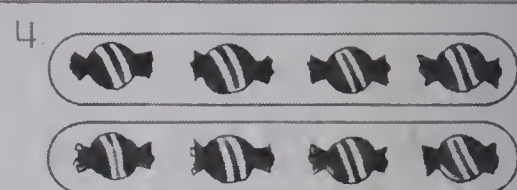
$$3 + 3 = \underline{6}$$

$$\text{two 3's} = \underline{6}$$



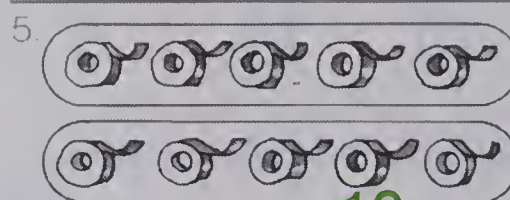
$$1 + 1 + 1 = \underline{3}$$

$$\text{three 1's} = \underline{3}$$



$$4 + 4 = \underline{8}$$

$$\text{two 4's} = \underline{8}$$



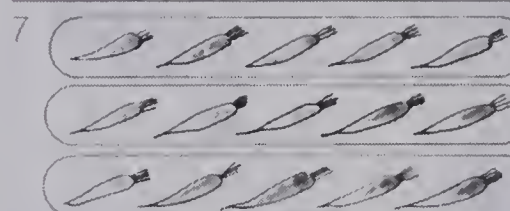
$$5 + 5 = \underline{10}$$

$$\text{two 5's} = \underline{10}$$



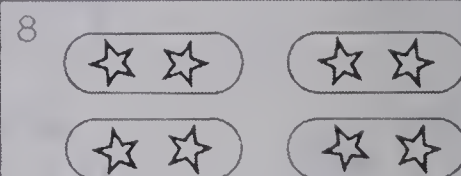
$$2 + 2 + 2 + 2 + 2 = \underline{10}$$

$$\text{five 2's} = \underline{10}$$



$$5 + 5 + 5 = \underline{15}$$

$$\text{three 5's} = \underline{15}$$



$$2 + 2 + 2 + 2 = \underline{8}$$

$$\text{four 2's} = \underline{8}$$

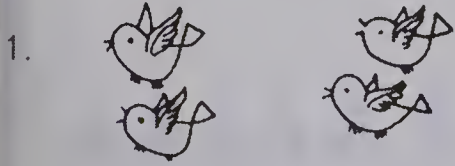
Readiness for multiplication (two hundred thirty-nine) 239

Using the Book Panel 1: Direct attention to the picture of the apples. Ask, "How many apples are in each set? (2)" Explain that there is the same number of apples in each of 3 sets. Direct attention to $2 + 2 + 2 = 6$. Ask, "How many twos are in the addition? (3)" Point out that the sum is 6. Have the child trace the 6. Next, read "Three 2's equals 6. The three means 3 sets. The 2 tells there are 2 in each set. The 6 tells how many in all." Have the child trace the 6.

Panel 2: Ask, "How many sets of oranges? (2) How many oranges in each set? (3)" Read, "3 + 3 equals what?" Have the child write the sum 6. Point out that there are 6 oranges in the picture. Ask, "Two 3's equals what?" Have the child write 6 on this blank. Say, "3 + 3 = 6, so two 3's = 6."

Panels 3-8: Direct the child to look at the picture to see how many sets, how many in each set, and how many in all. Then tell the child to find the sum, read the sentence below, and fill in the blank.

Multiply



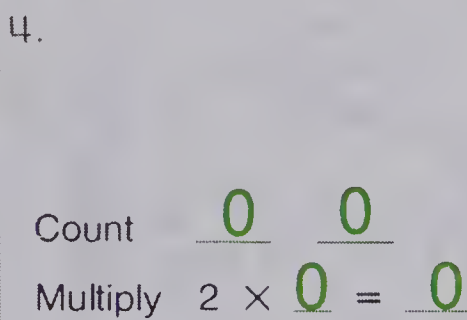
Count 2 4
Multiply $2 \times 2 = \underline{4}$



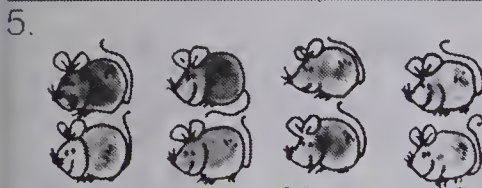
Count 3 6 9
Multiply $3 \times 3 = \underline{9}$



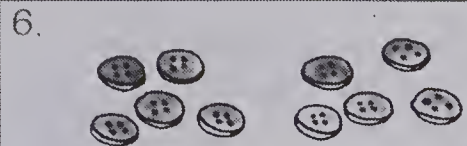
Count 2 4 6 8 10
Multiply $5 \times 2 = \underline{10}$



Count 0 0
Multiply $2 \times 0 = \underline{0}$



Count 2 4 6 8
Multiply $4 \times 2 = \underline{8}$



Count 5 10
Multiply $2 \times 5 = \underline{10}$



Count 5
Multiply $1 \times 5 = \underline{5}$



Count 4 8
Multiply $2 \times 4 = \underline{8}$

240 (two hundred forty)

Introducing the • sign

OBJECTIVE

To use counting exercises for multiplication readiness and write the results as $5 \times 2 = 10$

PACING

Level A (Initial Activities only)
Level B (Initial Activities only)
Level C All (guided)

MATERIALS

18 blocks

BACKGROUND

See Item 4 of the Chapter Overview Background

SUGGESTIONS

Initial Activity Set out 8 blocks in groups of twos. Have the child count the blocks by 2's. Ask: "How many 2's are there?" Then say: "4 groups of 2 is 8. We can write that $4 \times 2 = 8$." Set out 12 blocks in groups of 2's. Repeat. Arrange the 12 blocks in groups of 3's. Repeat. Arrange the 12 blocks in groups of 4's. Repeat. Ask the child to write the multiplication sentence (Level C only).

ACTIVITIES

Assist the children to draw sets similar to those on pages 239-240. (Explain that there should be no more than 3 equal sets with 6 items per set.) Display these on the bulletin board randomly with cards such as:

$2 + 2 + 2 = 6$
three 2's = 6

Challenge the child to correctly match a picture and a card using thumbtacks and yarn.

Using the Book Panel 1: Direct the child to count the birds by 2's, then write the numbers in the blanks. Ask: "How many do we have when we have two groups of 2?" Write the answer where it says $2 \times 2 =$. ("Two groups of two is what?")

Panel 2: Repeat the directions for Panel 1 except count by 3's.

Panels 3-8: Direct the child to look at the picture. Count the items by skip counting: 2's, 3's, 4's, 5's. Draw the child's attention to the fact that $5 \times 2 = 10$ means 5 groups of 2's is 10. (Do not at this time read this as "five times two equals ten.")

OBJECTIVES

To share a set of objects equally among two or more people (or groups)

PACING

Level A 241 (Initial Activities only)
 Level B 241 (Initial Activities only)
 Level C 241 All (guided)
 242

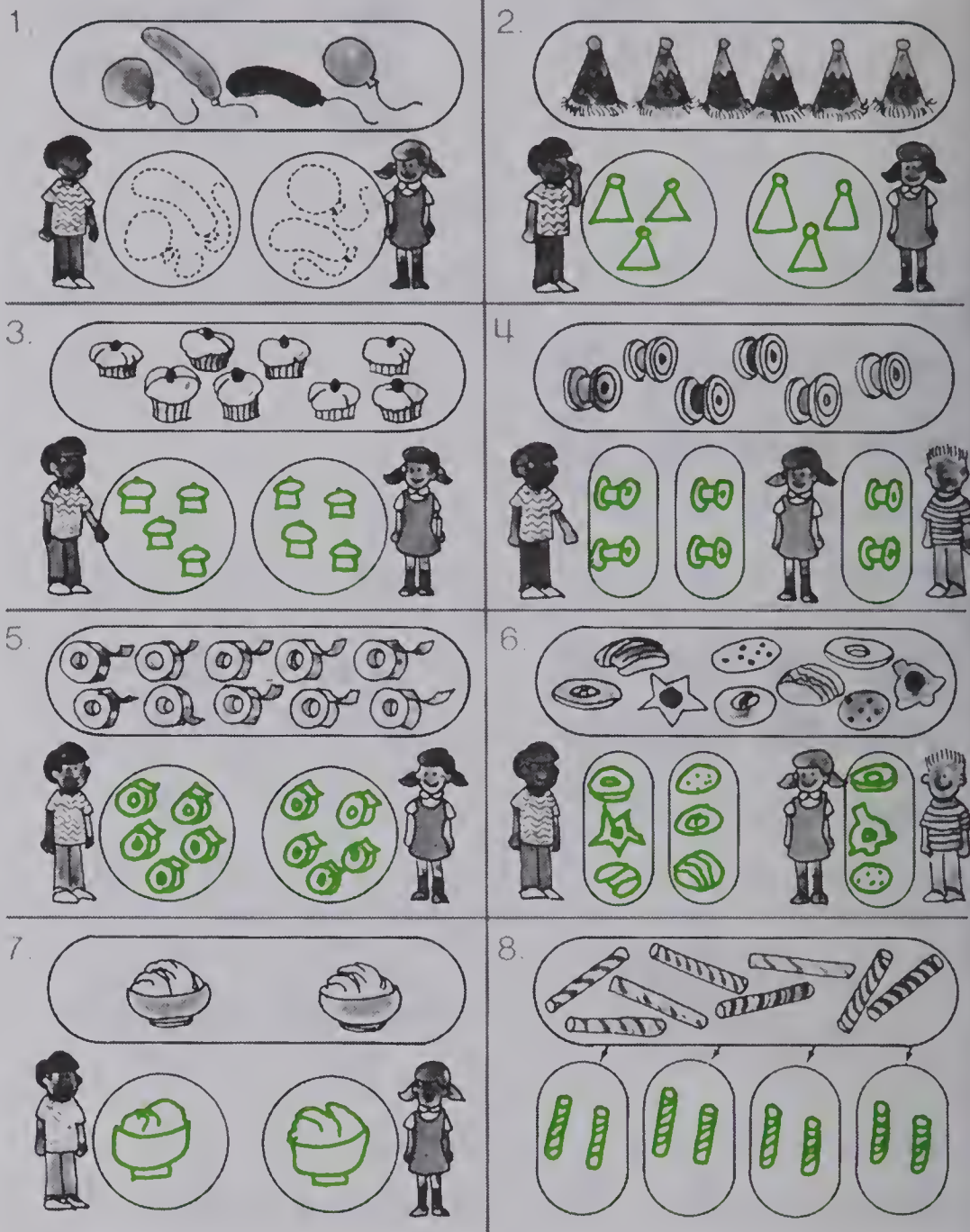
MATERIALS

12 blocks

SUGGESTIONS

Initial Activity Display a group of 6 blocks. Ask a child to share them equally between two other students (Jill and Bill). The child is to give Jill one, then Bill one, then Jill one, then Bill, etc., until they are gone. Ask: "How many does each student have?" (3) Say: "6 is the same as two groups of 3's." Repeat the Activity for three students. Repeat the Activity, using 8 blocks and share them among four students.

Share Equally



Readiness for division (two hundred forty-one) 241

Using the Book Panel 1: Direct the student to draw a balloon in the circles for each child to share equally. Elicit from the student "4 balloons is two groups of 2's."

Panel 2-8: Direct the student to draw the objects in the spaces, sharing them equally—"Give the same number to each child." Elicit a statement as in Panel 1. (An alternative for the student unable to draw the objects: have the child draw a line from each item to the circle (space) to show that one has been given to that child. Elicit from the child: "3 hats are given to each child. 6 is the same as 2 groups of 3.")

Sharing

1.



6 items
2 people

3 each

2.



4 items
2 people

2 each

3.



8 items
2 people

4 each

4.



9 items
3 people

3 each

242 (two hundred forty-two)

ACTIVITIES

Set up a bulletin board display (or use a flannel board). Put up pictures or cutouts of 6 balloons with a length of colored yarn attached to each. On the other end of each length of yarn tie a thumb tack.

Below the balloons put pictures or cutouts of 3 children. The student is to thumb tack a length of yarn to a hand of each child in turn until all the yarn is used. Another student should check the work to see that it is correct.

This display can be changed frequently, varying the number of balloons and the number of children.

Using the Book Panel 1: Direct the child to draw a line from one banana to the boy, from another banana to the girl, from another banana to the boy again, and so on, until there are no more bananas. Tell the child that the bananas have been shared equally between the boy and girl. Ask: "How many bananas did each get? (3)" Write 3 in the blank in front of each.

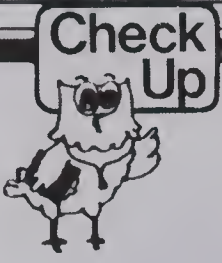
Panels 2-4: Repeat the procedure used for Panel 1.



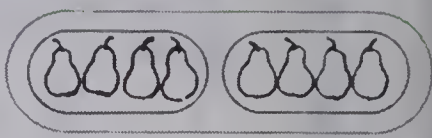
PACING

Level A All
Level B All
Level C All

SUGGESTIONS

This page can be used to diagnose difficulties the child might have with sums 8-12. The entire page need not be assigned in a single day. If preferred, you may test addition on one day and subtraction on another. On the basis of performance, you may want to provide individual help or additional remedial work for those children who have difficulty with a particular skill. The chart shows the page numbers to which the items and concepts apply.



1.	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ + 1 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$
2.	$\begin{array}{r} 7 \\ + 1 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ + 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 9 \\ + 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 8 \\ + 2 \\ \hline 10 \end{array}$
3.	$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$	$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$	$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$	$\begin{array}{r} 7 \\ + 5 \\ \hline 12 \end{array}$
					
4.	$\begin{array}{r} 8 \\ - 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 10 \\ - 9 \\ \hline 1 \end{array}$	$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 9 \\ - 7 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline 5 \end{array}$
5.	$\begin{array}{r} 10 \\ - 3 \\ \hline 7 \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ - 0 \\ \hline 9 \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline 4 \end{array}$	$\begin{array}{r} 10 \\ - 2 \\ \hline 8 \end{array}$
6.	 three 2's $3 \times 2 = \underline{6}$		7.  $4 + 4$ $8 = \text{two } \underline{4} \text{ s}$		

Diagnostic test sums 8-12 (two hundred forty-three) 243

Using the Book This is a mastery diagnostic page. (See Teaching Suggestions.) Encourage the child to write each sum and difference without counting.
 Panels 1-3: Tell the child to add.
 Panels 4-5: Tell the child to subtract.
 Panels 6-7: Tell the child to complete the number sentences.



1.

$$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 6 \\ + 5 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 5 \\ + 7 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 8 \\ + 4 \\ \hline 12 \end{array}$$

2.

$$\begin{array}{r} 12 \\ - 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 11 \\ - 4 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 12 \\ - 7 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 11 \\ - 5 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 11 \\ - 9 \\ \hline 2 \end{array}$$

3.

12 apples.
6 were eaten.
How many left?

$$\begin{array}{r} 12 \\ - 6 \\ \hline 6 \end{array}$$

4.

24 cats.
12 dogs.
How many in all?

$$\begin{array}{r} 24 \\ + 12 \\ \hline 36 \end{array}$$

5.

$$\begin{array}{r} 10 \\ + 30 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 26 \\ + 3 \\ \hline 29 \end{array}$$

$$\begin{array}{r} 70 \\ + 28 \\ \hline 98 \end{array}$$


6.

$$\begin{array}{r} 80 \\ - 20 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 97 \\ - 5 \\ \hline 92 \end{array}$$


$$\begin{array}{r} 49 \\ - 7 \\ \hline 42 \end{array}$$

7.



$$4 \times 2 = \underline{8}$$

8.



$$6 = \text{two } \underline{3}\text{s}$$

244 (two hundred forty-four) Chapter 11 Test

OBJECTIVES

To evaluate achievement of the Chapter Objectives

PACING

Level A All
Level B All
Level C All

SUGGESTIONS

The Chapter Test is designed to be used in a diagnostic manner. It assesses the child's knowledge of the main concepts and skills that were taught in this Chapter. Some children should take this test independently with guidance for instructions only. Use judgment as to whether certain children should be guided through some or all of the exercises. Check each child's work and mark the items that are incorrect. Reteaching or extra practice might be necessary to help the child acquire the concept or skill which was missed. With this reteaching, you will be able to ascertain whether the child has then learned the topic in question. See Using the Book for page references indicating where the concept or skill was taught.

ACTIVITIES

1. Have the child play Bingo as described in the Activity Reservoir. Use Basic Facts or adding and subtracting 2-digit numbers in the cells, depending on where the child needs the most practice.

2. Have the child play Jigsaw Puzzle Cards as described in the Activity Reservoir. Adapt the cards for sums and differences of 2-digit problems.

3. Have the child create a number puzzle to display on the Bulletin Board.

Using the Book This is a diagnostic test. The page references are given for reteaching as needed. The letter indicates the objective.

Panel 1: Tell the child to add. [11-page 231, 12-page 233 E]

Panel 2: Tell the child to subtract. [11-page 235, 12-page 237 F]

Panel 3-4: Have the child read the problem and show the work below.

[page 237 G]

Panel 5: Tell the child to add. [pages 219, 222, 224 A, C]

Panel 6: Tell the child to subtract. [pages 225, 227, 229 B, D]

Panels 7-8: Tell the child to complete each number sentence. [pages 239,

241 H, I]

PRACTICE EXERCISES

The Practice Exercises provide additional practice on the basic facts and the concepts presented on the pupil pages.

Notice that in this teacher's edition, pupil pages beginning with the Practice Exercises have been reproduced sideways to ensure the largest possible reduction. All pages are laid out so that the top of each pupil page is at the spine.

Basic Skills Check Up

1.
$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

2.
$$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

3.
$$\begin{array}{r} 5 \\ + 6 \\ \hline \end{array}$$

7 9 11 12

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

4.
$$\begin{array}{r} 4 \\ + 5 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

5.
$$\begin{array}{r} 7 \\ + 4 \\ \hline \end{array}$$

9 10 11 12

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

6.
$$\begin{array}{r} 9 \\ - 4 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

7.
$$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

8.
$$\begin{array}{r} 10 \\ - 7 \\ \hline \end{array}$$

2 3 4 5

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

9.
$$\begin{array}{r} 10 \\ - 5 \\ \hline \end{array}$$

4 5 6 7

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

10.
$$\begin{array}{r} 9 \\ - 3 \\ \hline \end{array}$$

3 4 5 6

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

11.
$$\begin{array}{r} 3 \\ + 2 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

12.
$$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

13.
$$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

14.
$$\begin{array}{r} 3 \\ + 2 \\ \hline \end{array}$$

5 6 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

15.
$$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

1.
$$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

2.
$$\begin{array}{r} 9 \\ + 1 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

3.
$$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

4.
$$\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$$

7 8 9 10

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

5.
$$\begin{array}{r} 7 \\ + 2 \\ \hline \end{array}$$

6 7 8 9

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

6.
$$\begin{array}{r} 12 \\ - 6 \\ \hline \end{array}$$

2 4 5 6

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

7.
$$\begin{array}{r} 11 \\ - 9 \\ \hline \end{array}$$

2 3 4 5

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

8.
$$\begin{array}{r} 12 \\ - 8 \\ \hline \end{array}$$

3 4 5 9

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

9.
$$\begin{array}{r} 11 \\ - 3 \\ \hline \end{array}$$

3 6 8 9

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ - 4 \\ \hline \end{array}$$

6 7 8 9

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

Basic Skills Check Up

11.
$$\begin{array}{r} 48 \\ + 50 \\ \hline \end{array}$$

40 58 78 98

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

13.
$$\begin{array}{r} 66 \\ + 11 \\ \hline \end{array}$$

55 77 88 99

$$\begin{array}{r} \bigcirc \bigcirc \bullet \bigcirc \\ \hline \end{array}$$

14.
$$\begin{array}{r} 30 \\ + 30 \\ \hline \end{array}$$

0 33 50 60

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

15.
$$\begin{array}{r} 50 \\ + 34 \\ \hline \end{array}$$

84 87 93 94

$$\begin{array}{r} \bullet \bigcirc \bigcirc \bigcirc \\ \hline \end{array}$$

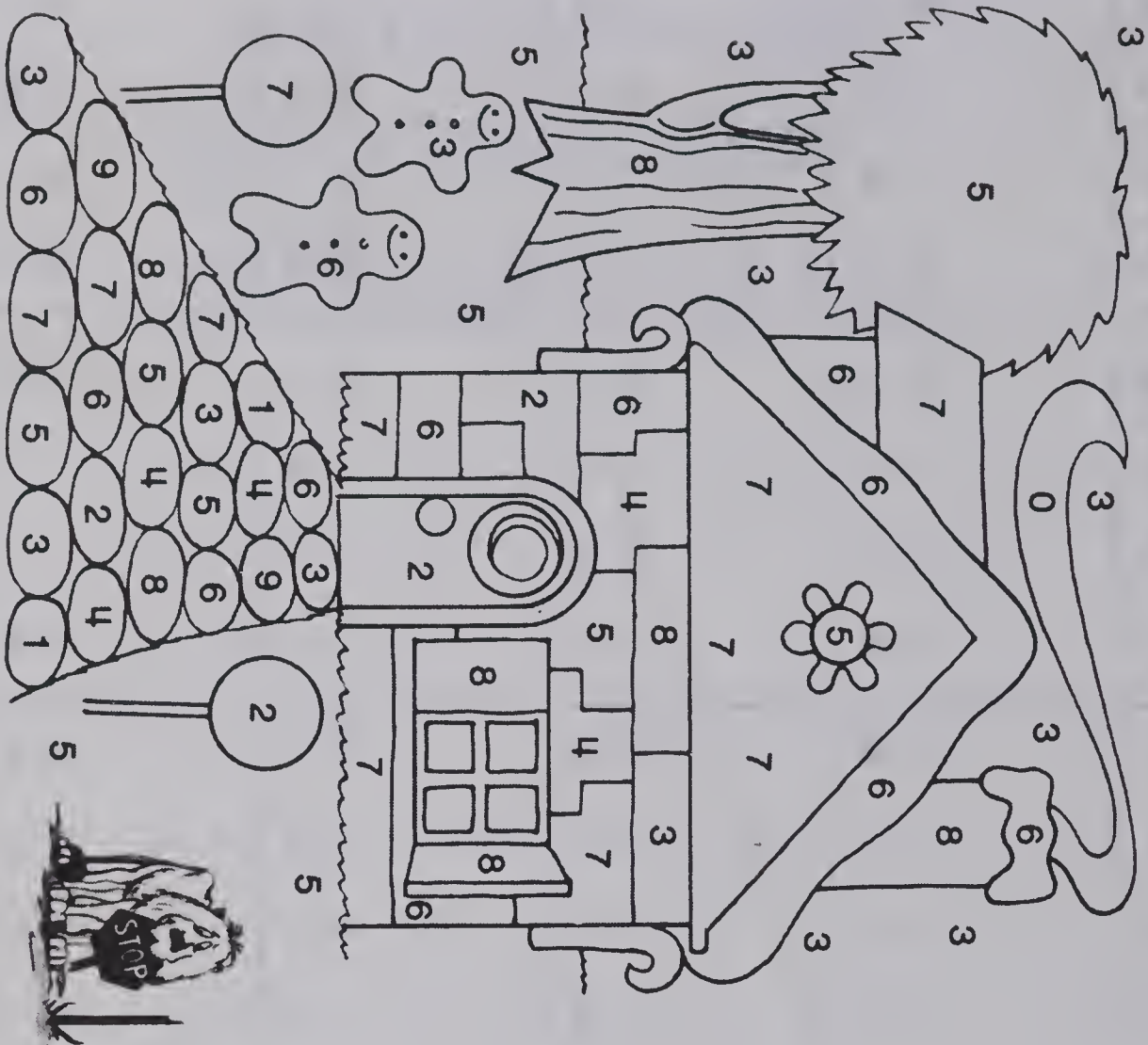
16.
$$\begin{array}{r} 98 \\ - 61 \\ \hline \end{array}$$

26 36 37 39

$$\begin{array}{r} \bigcirc \bigcirc \bigcirc \bullet \\ \hline \end{array}$$

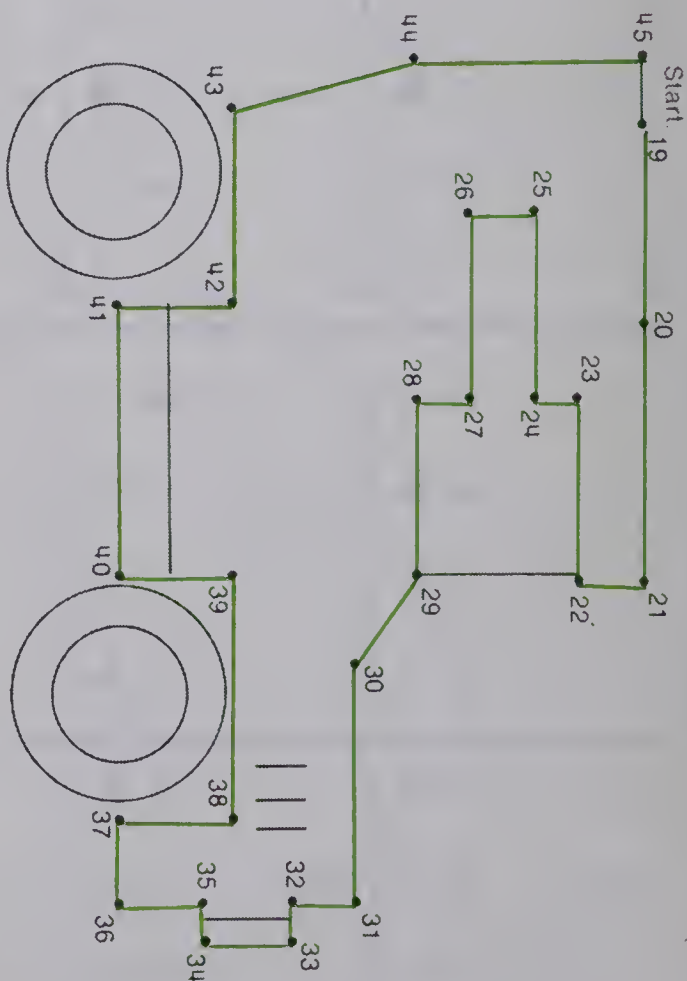
(21)

- 0 white 1 pink 2 red 3 blue
4 purple 5 green 6 yellow
7 orange 8 brown 9 black



Practice Recognizing numerals (two hundred forty-seven) 247

(81)



(90)

- | | | | | |
|--|----|----|----|----|
| | 44 | 46 | 48 | 50 |
| | 28 | 30 | 32 | 34 |
| | 20 | 25 | 30 | 35 |
| | 35 | 40 | | |
| | 40 | 50 | | |



248 (two hundred forty-eight) Practice Counting by 's 2's, 5's, and 10's to 50

(175)

$$\begin{array}{r} 3 \\ 1 \\ 0 \\ +7 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 2 \\ 5 \\ +1 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 4 \\ 1 \\ +3 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 11 \\ 33 \\ +3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 3 \\ 1 \\ +4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 1 \\ 3 \\ +1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 3 \\ 3 \\ +2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 44 \\ 00 \\ +2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 1 \\ 6 \\ +1 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 1 \\ 1 \\ +2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2 \\ 2 \\ +3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5 \\ 0 \\ +3 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 2 \\ 1 \\ +2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4 \\ +1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 7 \\ +0 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 1 \\ +5 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 3 \\ +3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 1 \\ +6 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ +0 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$$



(119)

$$\begin{array}{r} 7 \\ -2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ -5 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 7 \\ -1 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ -0 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ -6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ -7 \\ \hline 0 \end{array}$$

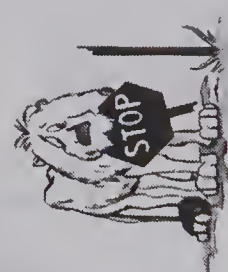
$$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ -5 \\ \hline 2 \end{array}$$

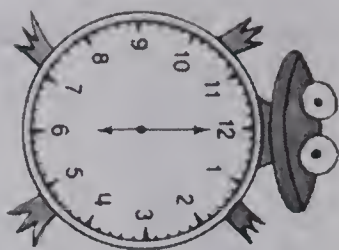
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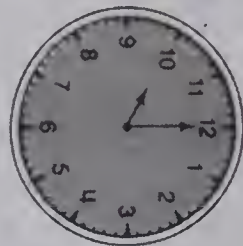
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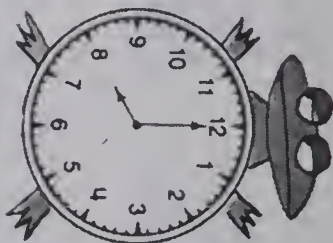
(152)



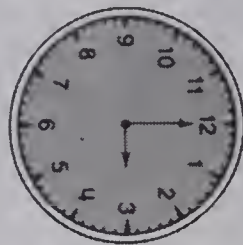
6 o'clock



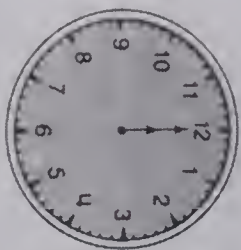
10 o'clock



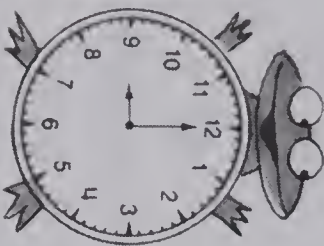
8 o'clock



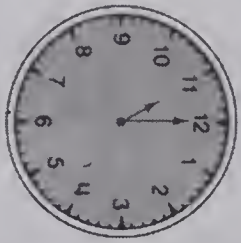
3 o'clock



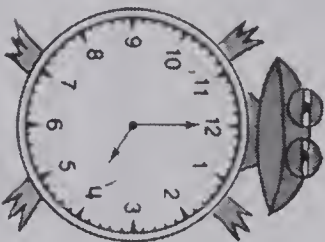
12 o'clock



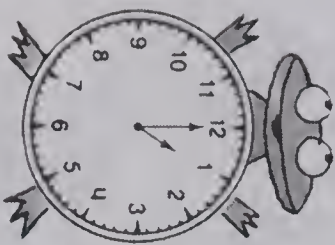
9 o'clock



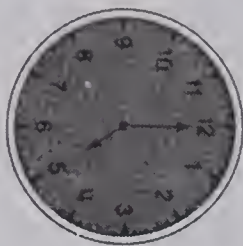
11 o'clock



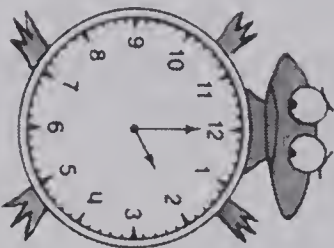
4 o'clock



1 o'clock



5 o'clock



2 o'clock



$$\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 6 \\ +3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 5 \\ +2 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ +2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 9 \\ +0 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 8 \\ +1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 7 \\ +2 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 1 \\ +7 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 7 \\ +0 \\ \hline 7 \end{array}$$

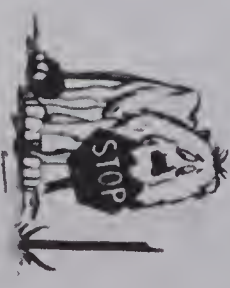
$$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 2 \\ +7 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$$



(183)

$$\begin{array}{r} 9 \\ -7 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 8 \\ -6 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 9 \\ -0 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 9 \\ -4 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 9 \\ -8 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 9 \\ -5 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 9 \\ -1 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 8 \\ -2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 9 \\ -2 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 7 \\ -1 \\ \hline 6 \end{array}$$

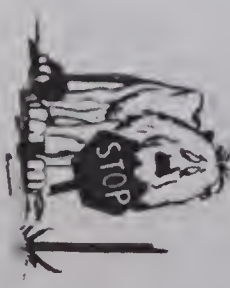
$$\begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 9 \\ -3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 8 \\ -7 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 9 \\ -9 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 7 \\ -5 \\ \hline 2 \end{array}$$



(179)

$$\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 8 \\ +2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 8 \\ +0 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 4 \\ +6 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 2 \\ +7 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 6 \\ +4 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 8 \\ +1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 7 \\ +3 \\ \hline 10 \end{array}$$

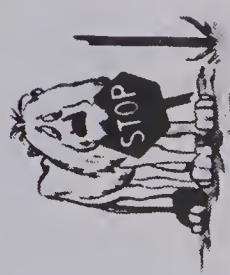
$$\begin{array}{r} 6 \\ +2 \\ \hline 8 \end{array}$$

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$$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 2 \\ +8 \\ \hline 10 \end{array}$$



(185)

$$\begin{array}{r} 10 \\ -2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 8 \\ -6 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 10 \\ -7 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 8 \\ -7 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 9 \\ -2 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 9 \\ -5 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 10 \\ -1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 9 \\ -3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 10 \\ -5 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 10 \\ -3 \\ \hline 7 \end{array}$$

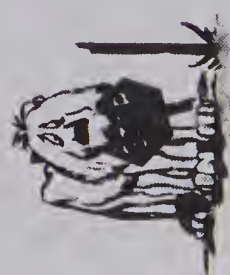
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$$\begin{array}{r} 10 \\ -6 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 10 \\ -4 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 10 \\ -8 \\ \hline 2 \end{array}$$



(219)

$$\begin{array}{r} 60 \\ +10 \\ \hline 70 \end{array}$$

$$\begin{array}{r} 30 \\ +30 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 40 \\ +50 \\ \hline 90 \end{array}$$

$$\begin{array}{r} 20 \\ +30 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 60 \\ +20 \\ \hline 80 \end{array}$$

$$\begin{array}{r} 50 \\ +10 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 40 \\ +40 \\ \hline 80 \end{array}$$

$$\begin{array}{r} 60 \\ +30 \\ \hline 90 \end{array}$$

$$\begin{array}{r} 50 \\ +20 \\ \hline 70 \end{array}$$

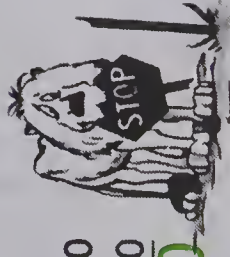
$$\begin{array}{r} 10 \\ +20 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 10 \\ +40 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 50 \\ +30 \\ \hline 80 \end{array}$$

$$\begin{array}{r} 40 \\ +20 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 20 \\ +20 \\ \hline 40 \end{array}$$



(225)

$$\begin{array}{r} 90 \\ -60 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 70 \\ -10 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 80 \\ -40 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 30 \\ -20 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 50 \\ -30 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 80 \\ -50 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 20 \\ -10 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 50 \\ -20 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 40 \\ -10 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 60 \\ -30 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 80 \\ -60 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 70 \\ -30 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 60 \\ -20 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 90 \\ -70 \\ \hline 20 \end{array}$$



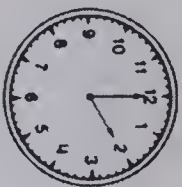
1. (218)



2.



8 o'clock



2 o'clock

(218)

$$\begin{array}{r} 24 \\ + 35 \\ \hline 59 \end{array}$$

$$\begin{array}{r} 62 \\ + 36 \\ \hline 98 \end{array}$$

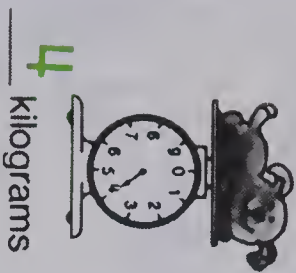
$$\begin{array}{r} 73 \\ + 23 \\ \hline 96 \end{array}$$

$$\begin{array}{r} 50 \\ + 18 \\ \hline 68 \end{array}$$

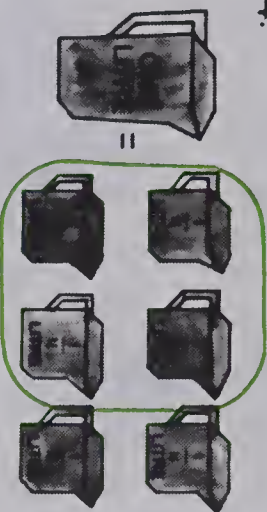
$$\begin{array}{r} 43 \\ + 23 \\ \hline 66 \end{array}$$

(221)

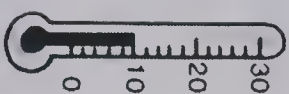
3.



4.



5.



6.



9 o'clock



6 o'clock

(227)

$$\begin{array}{r} 67 \\ - 57 \\ \hline 10 \end{array}$$

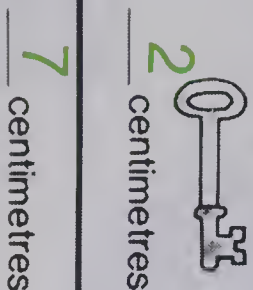
$$\begin{array}{r} 45 \\ - 32 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 29 \\ - 11 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 77 \\ - 43 \\ \hline 34 \end{array}$$

$$\begin{array}{r} 67 \\ - 40 \\ \hline 27 \end{array}$$

7.



8.



2 o'clock



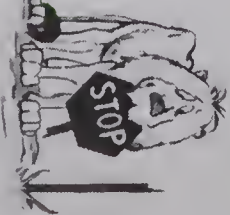
10 o'clock

$$\begin{array}{r} 65 \\ - 13 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 85 \\ - 60 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 64 \\ - 54 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 48 \\ - 17 \\ \hline 31 \end{array}$$



$$\begin{array}{r} 99 \\ - 27 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 84 \\ - 52 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 53 \\ - 20 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 75 \\ - 22 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 89 \\ - 27 \\ \hline 62 \end{array}$$

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DUE EDUC.	FEB 27 '89 <i>R</i>	
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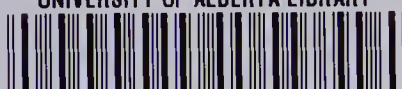
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